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MEDICAL EDUCATION IN CANADA

TANGIBLES AND INTANGIBLES IN MEDICAL EDUCATION

E. P. SCARLETT, M.B.,* *Calgary, Alta.*

I.

IT MAY BE ALLOWED that every age must re-define the goal of its educational striving. For us, with the vast accumulation of human knowledge since the eighteenth century, this has become an increasing necessity, and today a far-reaching attempt is being made to come to some reasonable terms with the dilemma which faces education at all levels—the securing of a liberal education in a technical and specialized society. The necessity is urgent if only because the price of high efficiency in one calling appears to be the divorce of most men from the deepest sources of human happiness and the loss of the broad qualities of mind and spirit which comprise the wisdom on which the future of our society depends. This intense preoccupation with a limited sphere of work and with practical aims and techniques is defeating any intelligible ideal which society can have for its members and is contributing to the confused and frustrated mood of our time.

Realizing this and in the face of the terrible realities of the present world, education is being subjected to a searching examination. If we are to keep our heads in the debate and not get lost in the chaos of opinion, it is important that we maintain a sense of perspective, a consideration of the whole range of evidence and a steady regard for basic values. It is important too that we discount all rhetorical abstractions and loose ideas whose advocates have no responsibility for putting them into practice.

This is the climate of opinion in which we must consider medical education. Like every other field of education it has its own problems and its own difficulties. But it is being powerfully

affected by forces flowing from three sources—the crisis in general education, the many and rapid discoveries changing the whole face of medical practice, and the conditions and temper of modern society. Education at large is suffering from the pressure of numbers, a deterioration in quality, confusion and corruption of standards, the ever increasing atmosphere of vocationalism, all of which are being reflected in professional education. For certainly it is true that educational standards in school, college and professional faculties are indivisible. The currents of medical practice as they affect medical education arise from the bewildering proliferation of knowledge, the specialization tendencies and the changing emphasis on general practice, all expressed in increasing tempo and volume. And finally medical education must reckon with the forces of modern society in a state of political and social revolution—the sense of cultural crisis, mechanical literacy, confusion of values, a corrosive utilitarian philosophy of life, and the growing powers of the state. More particularly medicine is being increasingly involved in relations with institutions of all sorts and conditions—industry, insurance agencies, welfare organizations, and departments of government.

In the face of all these considerations medical education must resolve its problems and direct its course in the light of the creative insight and disciplines of two great orders of thought and human experience. The first, educational—acting with the guidance and illumination of the principles which are true for education everywhere and always, and are embodied in the idea of the university. And the second, the traditions and heritage of medicine of two thousand years. For while medicine cannot be indifferent to the changing economic, technical and social needs of the community which it serves, it must at the same time keep in mind the needs and interests of another order, those of the body and spirit of man. Aristotle speaks of the State as “coming

*Chancellor, University of Alberta.

into being for the sake of life, but as existing for the sake of the good life." That is a very fair statement of the aim of medicine and of the end which medical education must serve.

In these particulars, therefore, is the obligation that lies with special force upon those responsible for medical education, that they not only order the courts of instruction but that in so doing they look to the strengthening of the defences and the walls of the profession of medicine itself. In carrying out that commission they will have regard for the best traditions of liberal education and of our medical heritage, and, while about the business, remember Burke's admonition that "merely to innovate is not to reform."

II.

Medical education on this continent for many decades has been established firmly in its historical place within the walls of the university. In this connection lies its strength and its opportunity. It should share and be moulded by university ideals, disciplines and traditions. The proper function of a university is "the imaginative acquisition of knowledge," to prepare students not for a vocation but for life as free men in a free society. Its purpose is to provide not a professional training but an education for professional service. Education is first, training secondary. Permeated by the university outlook and disciplines, medicine gains its breadth of outlook and the framework of its universal appeal. This is what makes it possible for it to be regarded as a learned profession. Such a spirit converts a medical trade school into a professional faculty, establishes high standards and advances its scientific aspects.

To achieve this synthesis of a professional course and the university idea there are at least three prerequisites. First, the presence of imaginative teachers with ranging intellectual curiosity and the power to perceive and illuminate the connections between their subject and other areas of human knowledge. The personality of the teacher is the all-important thing, far and above matters of curricula, methods, and specialties, on which so much discussion is expended. The teacher is the steward of learning and the advocate of excellence. It is not so much *what* a man is taught in medicine or in any other field that counts as *how* he is taught. Second, teaching less in a longer session and making that teaching a more personal affair through

tutorials, discussion groups and small courses. And third, making possible more active participation in the life of the university, thus securing the cross-fertilization that comes from exchange of opinions among scholars and scientists of different interests in residence, common room and campus. This is the means by which the *Universitas*, a corporation of scholars, old and young, has achieved its purpose and power down the centuries. This is a particular need for students of medicine, who traditionally have been completely and passively absorbed in the vast burden of their course.

What we are saying in effect is that the spirit of the university be infused into the medical school. This leads us straight to the liberal arts and the humanities, those studies that for two thousand years have played a vital role in formal education. They are the wellsprings of a free society, to use President Griswold's fine phrase. Their purpose in our educational system was clearly stated by John Stuart Mill years ago—to make "capable and cultivated human beings." "Men are men," he went on, "before they are lawyers or physicians or manufacturers; and if you make them capable and sensible men, they will make themselves capable and sensible lawyers or physicians." Such a statement emphasizes the idea of wholeness, of concern with man in all his multiple relations. It asserts the basic unity of all knowledge and is the corrective attitude to the narrow approach and concern of too intensive specialism.

It is imperative, therefore, that liberal arts subjects and in particular the humanities be incorporated into the training of a physician, certainly in the earlier premedical years, and that the spirit thus fostered be carried forward into the undergraduate period. Such training does not decrease the student's professional aptitudes. Rather it provides unity and strength in the face of the complexity and differences of the medical course. Sir William Osler had this in mind when he said:

"The wider and freer a man's general education, the better practitioner he is likely to be. . . . In no profession does culture count for so much as in medicine, and no man needs it more than a general practitioner, working among all sorts and conditions of men, many of whom are influenced quite as much by his general ability, which they can appreciate, as by the learning of which they have no measure."

In this way and by these means, the student in medicine will encounter "the dimension of

depth," to use Sir Hector Hetherington's phrase, "to discover for himself how deep down, beyond his reach, go the questions which enter into his handling of any significant matter." In this regard research, at a later period of development, is a fine discipline. But for the undergraduate at the earlier levels, this discipline must be provided through the arts subjects, notably literature and history, science subjects broadly conceived and presented, and above all, as we have already pointed out, through the personality, mind and mental atmosphere of the teacher.

This argument raises the question of a specific premedical course or training. I am convinced that, as laid down at present, not only is it not necessary but that it is in part responsible for the present disappointing results in medical education. The student is denied broader cultural training at the very time when he should be having it. He is fitted into the medical mould too soon. Young physicians with whom I have discussed this question insist that the place for a broad educational programme is in the high school. They say that if one waits until the medical course proper to introduce courses in history or the social sciences, it is too late. The grafts will not take. This fact is being realized, and authorities are beginning to consider for the premedical years a programme of general education, well planned and not diluted by too many superficial electives, with sufficient instruction in science to illustrate the broad principles of the subject.

Returning to the university world in which medical students are reared, you may say that these ideas about the spirit and aims of liberal education are all well and good, but after all are they not mostly fine talk, whereas medicine is a practical business and demands techniques and experience in doing things? If we must talk in practical terms I should say that first of all it is sound common sense to ensure what the student is going to do with his techniques; that, in the next place, special training is based only on a sound foundation of broad knowledge, tolerance and imaginative insight; and that, finally, technical training comes last and not at the start before the student has had a chance to get his bearings in the world. Still speaking in practical terms, here are what the university environment and spirit have to give to the young medical student—precise use and understanding of language, a healthy respect for the lessons

of the past, a widened range of creative imagination, experience of life and people (through history and literature), a grasp of the value of judgments, moral support for an attitude of unselfishness and self-respect.

III.

In what I have just been saying I am not for a moment overlooking the disciplines of science and medicine in themselves. All virtue does not reside in the liberal arts faculty or in the humanities. Science has its own fine cultural value when properly taught by men of broad and sensitive outlook. And then there are the disciplines of medicine itself. Education in the various medical branches and in hospital wards is one to develop the highest qualities of the mind and to engage the heart with faith and charity. Medicine has vital interest as well as utility; it is illuminating as well as fruitful. In the words of Dr. Johnson, it helps to advance us in the dignity of thinking beings. It demands the fullest employment of all our faculties, no arena of life more so. It calls for the highest personal qualities of integrity, imagination, industry, tolerance and the highest of all attributes—sympathy and humility. Unlike the fields of pure science, it engages the individual in matters of the human spirit and in the recognition of the great basic values of human life. Seriously conceived and adventured upon, it is a challenge to the individual's powers of body and spirit beyond nearly any other vocation of man.

Properly presented, the disciplines of medicine should bridge the gap between the humanities and science. That has been so in the past, and today it can be illustrated in the personalities and achievements of scores of medical men. And medical idealism is a counterbalance against materialism and the pragmatic philosophy of our time—two evils loudly bewailed by educators in all fields. This is why it is so necessary that medical education should bring to every student the essential transcendental nature of our profession from which much of the traditional wisdom and integrity of medical practice has been drawn and which has been nurtured and found its sanctuary within the humane traditions of the university.

These are things that need to be remembered in a time of uncertainty of values and confused ideals. It is important that teachers and practitioners of medicine should in such terms state

what we believe, even though we all fall short of their realization. And if students come to realize them as well, we need not worry too much about the details of medical education. I would say, therefore, that we in the medical profession have no need to despair. We have within our own profession the instruments for forging character and professional skill, and in addition we have the resources which in a time of trouble are the munitions of fortitude.

IV.

I hope that I shall not be thought guilty of impertinence or contempt of authority if I refer briefly to some more detailed matters in undergraduate medical education.

Broad outline of course.—The course as a whole should endeavour to achieve the main aim, which is to provide "a solid framework of fundamental principles applicable to all areas of medicine." This is the basic structure of the doctor's training on which he builds through further training in any one of several fields. In this programme the specialties must not usurp a large proportion of the curriculum. Such a pattern is well illustrated in the following excerpt from the report of the Committee on Undergraduate Medical Education of the American Surgical Association:

Education in contrast to research deals primarily with the general aspects of the subject. Specialization is out of step in basic education because it is concerned with details, and details in profusion obscure concepts. It is not until the student is advanced that he should be involved with specialization.

Thus undergraduate medical education should deal primarily with the concepts of general fields. A special field should be explored only as an example of a point of view and of the ways and benefits of research. The undergraduate years cannot hope to cover the points of view, techniques of knowledge of all the special fields of medical science and practice, and the specialist who limits his teaching to his special interest is a discordant teacher of the undergraduate phase of medical education.

Such a scheme is now possible since it has become the accepted custom for the student after graduation to take at least a year or more of practical training. This should make it possible for the medical school to arrange a programme without too much preoccupation with immediately practical requirements. We are no longer obliged on graduation to turn out an Admirable Crichton capable of dealing efficiently with all ills.

Curriculum.—Curriculum and teaching methods will always be changing. There seems reason, however, to suggest at the present time in-

creased integration into the whole pattern of instruction of such subjects as anatomy, physiology and biochemistry. Then two new trends have broadened the perspective of basic medical training—that arising from psychiatry making for a wider interest in the individual and his environment, and that from social medicine stressing the broader arena of medical interests in a variety of social agencies. Such principles have still to be worked out in terms of curricular study. And finally, there appears to be the feeling among clinical teachers that the old-fashioned teaching clinic is no longer adequate and that clinical teaching with continued and intimate contact with the patient must be organized in the hospital wards. This is a change that is in urgent need of being worked out.

There is little that need be said further about the problem of the specialties around which so much discussion rages. Herein resides one of the greatest challenges to education today. It may be pointed out, however, that Whitehead's dictum stands as a beacon: "You may not divide the seamless coat of learning." Concentration upon one area of knowledge is not what is feared, but rather the teaching of such a special subject in a narrow and an unrelated way untouched by the larger considerations that foster those qualities and energies of mind which later should direct professional practice. It is important too that medical schools do not give ground to pressure from the licensing colleges or specialty boards and tailor pregraduate medical education to predetermined plans leading to postgraduate activity. It is true that in a sense professional intention prescribes the disciplines through which the educational end is to be achieved, but it is the duty of the medical school to see to it that curricular content and methods are determined by educational rather than by purely professional considerations.

The value of the teaching of the history of medicine has not been sufficiently appreciated, with the result that its place in the curriculum and the method of presentation have still to be established. With proper co-ordination it can be a powerful influence integrating the many fields of medicine, relating medicine to other areas of knowledge and providing a philosophical outlook.

Indeed as one looks at the whole enterprise of medical education it is encouraging to find

that lively experimentation is going on—in family medicine, in the old group of disciplines given the new name of social medicine, in the endeavour to meet the new relationships and social responsibilities in which medicine is being involved to an increasing degree.

V.

As well as showing a willingness to innovate and explore new channels, I would plead for more courage in medical education. In this sphere we are dealing only with a selected group of students. We are not handicapped by the task of finding a common denominator for a whole host of young people of varying aptitudes and abilities such as obtains in the field of secondary education. We can afford to educate for the virtues of medical aristocracy. We do not need to be afraid of quality.

In this task may I suggest that the enterprise of medical education implies and asserts three supreme aims—first, to lay the foundations of technical training within the compass of the world and the traditions of the university; second, to educate for a profession; third, to develop character which later will find its flowering in the doctor-patient relationship. These are the terms of the commission given our schools of medicine.

Of the first, laying the foundations on which later techniques and special training will be based, sufficient has already been said. Here students will be given a sense of style and basic disciplines of work and method which are the essential equipment of the good physician. And the second—realizing that at all stages medicine is a profession, and the physician something more than a great technician. In a profession society demands more than an organized group working according to certain rules. It demands special competence always striving to improve itself, and a standard of morality more exacting than the community in general follows. This ideal can be achieved by preserving the features of a broad education in the midst of vocational training. This in turn can only be achieved if we have in our medical schools men of first-rate ability and character, by placing the monetary rewards in our faculties of medicine at such a level that such men will take up this calling (and there are many eager to do so if they can be assured of a reasonable livelihood). It is not an impos-

sible ideal. It is simply Hippocrates' ideal of medicine as a "profession of cultivated gentlemen."

The third fundamental aim—to develop integrity of character which gives capacity for sympathetic human relationship on which the whole of medicine is based. There is a growing concern for moral values in medical ranks, nowhere more than among the younger members of the profession who are troubled by the absence in many quarters of an appreciation of the ethical and moral problems of our society. The assertion of a philosophy of life within the ancient and traditional world of medicine should not be a difficult task, and it is only because somehow we have allowed the corroding influence of modern life to weaken our spirit and resources that we have fallen short. For Osler medicine was a way of life. In medicine every decision is an act of faith—and a faith is apt to lose its cutting edge if it is not firmly held in the shaft of a creed. And our creed as physicians has been forged by the labours and dreams and devotion of generations. It should be a firm anchorage for all doctors, this belief in the ancient virtues which reside in "the medical gods."

For the student and the novice in medicine we have this creed and these disciplines to offer. In terms of education they can be strengthened by a regard for Albert Schweitzer's teaching of "reverence for life," by Whitehead's dictum that "moral education is impossible apart from the habitual vision of greatness," and by old Jeremy Taylor's saying that education of the right sort transmits "glimpses of a vast excellency." And they can be climaxed in all humility and in all verity by the proud boast that it may be said of medical men in war or in peace: "They bore their responsibility in the predicament of the world."

ALCOHOLISM AND POLIO

The Alcoholism Research Foundation of Ontario reports that in 1952 there were nearly 30 times as many cases of alcoholism in Canada as there were of poliomyelitis (140,000 of alcoholism and 4,755 of poliomyelitis); and the mean reported rates of death attributed to alcoholism over the past 20 years exceed those reported for epidemic or acute poliomyelitis. This, in spite of the acknowledged fact that deaths attributable to alcoholism are notoriously under-reported owing to the stigma attached to this condition.

THE EDUCATION OF A GENERAL PRACTITIONER—NOW AND THEN

H. G. HALL, M.D., *Toronto*

A MODERN TREND in the lay press and in the medical journals seems to be to write about the general practitioner. All the various phases of the life and work of a family doctor have been scrutinized. Indeed the variety of phases discussed has been equalled only by the variety of authors. Surgeons and laymen, professors and statisticians, even historians have all dealt with aspects of it. Before he starts to write on this subject an author should be sure that he is presenting some new viewpoint. In this instance, the writer hopes that the conduct of a general practice for 22 years may be a little better background than one year's experience 22 times.

The first step in this discussion is to decide who is a general practitioner. This is not as easy as it appears. So wide is the field of general practice that to say a man is a general practitioner is not much more informative than to say that he is a surgeon. After much deliberation the College of General Practice arrived at the negative definition that "he is a doctor who does not limit his practice to any one field of medicine." A popular identification—flippant but descriptive—is: "A general practitioner is an internist who does as much surgery as the hospital facilities, and his colleagues, will permit."

As we have seen, to define general practice is not easy. To outline its scope is even more difficult. When a young man has finished his junior internship, he may then select from some 20 different specialties. If he wishes, he can limit his time and study to one particular specialty and ultimately become a specialist in that field. He may choose, however, to go into general practice, in which case he will extend his time and study mostly to the specialties of internal medicine, obstetrics, paediatrics, and surgery. But there is a difference! For the general practitioner, the specialties become intermingled with each other and all mixed up with his daily life. The quiet little dinner party may be changed for a session with a colicky baby. The two hours set aside for reading may be spent in the operating room with a case of acute appendicitis. The fishing trip may have to be cancelled because of a suspected ectopic pregnancy. His summer holidays depend upon the

state of his neighbours' coronary arteries. Even a night's rest is not assured to him for he is like a puppet on the end of a telephone wire. Day and night his professional duties pervade his life. He cannot separate his work from his play. General practice is a way of life!

In the Nuffield Trust Survey on General Practice, Dr. Stephen Taylor stressed that "continuity" was the one main characteristic of the work of the general practitioner. He pointed out that no other doctor sees the patient from year to year, from illness to illness, from the cradle to the grave. I believe that this continuous association "in sickness and in health" develops the most important thing in general practice—an appreciation of the individuality of the patient. The general practitioner knows his patients' personalities, adequate or inadequate. He can assess their distress better than anyone else. He is best fitted to know the difference between the tiredness of boredom, financial difficulties, domestic trouble or early carcinoma. In the hospitals cases are treated, but in general practice we treat sick individuals.

These trite remarks about general practice must be given consideration in any educational programme for the general practitioner. Too often, however, these fundamentals are overlooked or forgotten. Why does the undergraduate medical student spend so much time on the wards of a hospital? There, clothed in a hospital gown, he sees the patient isolated from his family, from his work, and from his community. There he sees the serious and advanced forms of disease. From there he goes to the laboratory to study the jars full of material which is "the result of unfavourable or irreversible pathological conditions." In practice he will mostly be seeing mild and early illnesses and, indeed, often it will be no more than an unusual physiological condition. Why start at the end of the disease pattern instead of at the beginning?

What is the remedy? I believe the cure is to start clinical teaching early in the outpatient department of a hospital. A short course in the basic sciences to give the bare fundamentals and to determine whether a student is a suitable candidate should take only a few months. The further elaboration of the sciences could then go on step by step with the clinical advancement. In the outpatient clinic the student could be started on diseases of the skin. A short history and careful inspection usually suffice to diagnose

those lesions of purely local significance. Supplement this with the anatomy and histology of the skin and the elementary physiology of glandular secretion and of peripheral sensation and you will probably have launched him enthusiastically in a career. Then he could come to the diseases of the bones, joints and muscles. Here a little more extensive history is needed, with inspection and some palpation. Even the radiographs of the simpler conditions could be interpreted. The anatomy of the bones, joints and muscles and the physiology of muscle function would then be learned eagerly. It seems to me that in thus spreading out the basic sciences and correlating them with the clinical material one would enhance interest in them. Anatomy, physiology and pathology are not likely to be any less soundly implanted because they are taught over a period of two or three years instead of one year, especially when the practical application of it all can be seen.

The gastrointestinal system might well be the next object of study. Here the skills already developed are given more scope. History-taking is much more important here, and therefore must be more thorough. Inspection and palpation become more difficult, and to these will be added some simple percussion. The pace quickens and the basic sciences advance rapidly and are extended to include biochemistry and pharmacology. Radiology is becoming increasingly important and difficult. More time would have to be spent in the wards but the outpatient department should still be used for teaching.

The student's entry into the hospital wards seems to be the proper time to start the public health course. It should cover more than just preventive medicine and hygiene. He should have the opportunity of accompanying the social service workers and public health nurses on their rounds into the homes. At some time he should visit orphanages and old people's homes, well-baby clinics, the court of domestic relations and the O.P.D. of a psychiatric hospital. If it were possible at all, he should see the homes from which some of his patients come.

The genitourinary system could follow the gastrointestinal. After these, the likely region would be the upper and lower respiratory tract, introducing the use of auscultation, and followed by the cardiovascular system. By thus advancing the study of the systems steadily with the increasing skill, a lively interest could be main-

tained, not only in the clinical material but also in the basic sciences.

Because to study them requires a broad knowledge of the entire body function which they regulate and control, the nervous system and the endocrine system have been reserved for the last. When these have been mastered the student can be introduced to the specialties, such as obstetrics and advanced psychiatry.

The intern who is contemplating general practice would be well advised to concentrate on medicine, pædiatrics, and obstetrics and gynaecology, in that order. Contrary to popular belief, patients requiring major or minor surgery constitute less than 3% of those seen by a G.P. In a temperate climate such as ours, otolaryngology occupies more of his time (about 5½%) and should receive attention accordingly. He will find experience in the O.P.D. prenatal clinics, emergency and well-baby clinic most useful. He should welcome any opportunity to meet the family or to get the social service report on the case. Lastly, any chance to discuss the case with the family doctor who referred the patient to hospital should never be missed.

If possible every G.P. should have a hospital appointment. In a properly organized hospital, the most natural place for him is in the outpatient department. Such an appointment, however, is not of much value to him unless it can be made different from his own office work. There are three ways in which it can be made an inducement for him. Firstly, it should afford him an opportunity to see and to use the new diagnostic and therapeutic techniques. Secondly, there should be a period after each day's work when the interesting cases may be shown and discussed. If a patient is admitted to hospital, the G.P. should be afforded the opportunity to follow progress on the ward. Thirdly, for every day that he works in the general O.P. clinic, he should be allowed to work a day in one of the special clinics. This should be on a rotating basis so that he would get three months in a medical clinic, three months in a surgical clinic, and so on. Thus he would be rewarded for his work in the general clinic by a complete rotation through the special clinics. If after one or two complete rotations through the special clinics his work warrants it, he should be taken on to the indoor staff.

Where would the G.P. advanced in this way fit into the indoor staff? There, too, I think he

should be on a rotation of a few months in each service. Some people seem to feel that he would be just another intern on the service. That is not so. The work of the G.P. and the intern would be complementary. The younger man, fresh from college, would have the basic sciences at his fingertips, but not having completed his rotation of the services would be lacking experience. The older man, with his diversified experience, would be able to teach much but in turn would have his knowledge of the basic sciences refreshed. It would be an association which should be mutually beneficial and should lead to a respect for each other, a condition that does not always exist at present. The important function of the G.P. on any service, however, would be to bring his broader viewpoint to the problems and thus give balance to the discussion. On surgery he would be as an internist, on medicine he would be as a surgeon, and on obstetrics he would be able to contribute the viewpoint of both. Not that he would replace these specialists in any way, any more than the ambassador replaces the foreign minister. From his wider experience he would be able to facilitate the necessary processing of the case.

Let us not forget about those areas where the hospitals are small and are not organized. In these places the local doctors should organize their own clinical societies. Such a group can always invite a guest speaker for their meetings. Didactic teaching is not enough. They must prepare and present cases themselves if they hope to advance. The visiting clinician can then discuss their papers with them. An open forum is often a helpful procedure. If possible, the major specialties of medicine, surgery, paediatrics and obstetrics should be covered once a year. If more than four meetings are held, a selection from other specialties could be made.

It is a good thing for the general practitioner to attend postgraduate courses, many of which are offered every year. To aid in the selection of such a course there are some points to keep in mind. It is better to select teaching centres new to the practitioner. In this way he broadens his outlook. Ward rounds and clinical demonstrations are preferred to a didactic course. The presentation of oddities and rarities is of value only if they demonstrate something about the more common things. Because in his work he is often dealing with conditions which are on the borderline between the physiological and

the early pathological, he should seek courses in the basic sciences from time to time. Short courses of two or three days, repeated frequently, are of greater value than a prolonged course. There are, of course, those who say that they can read in the medical journals all that is taught in the postgraduate courses. This is true, but with the volume and variety of work of a general practice, how many men are able to do it? Lastly, association with his colleagues and personal contact with some of the leaders of medicine are of real value to him.

Not so long ago every medical graduate started out as a general practitioner. After a few years if he found that he liked one field better than the others and if his colleagues recognized that he had an aptitude for it, it was likely that he would ultimately confine himself to that type of work. I cannot think that his work as a specialist suffered because he had been a general practitioner at one time. But times have changed, and now he is expected to know his aptitudes by the time he has completed his junior internship. If he should go into general practice and then find that he has the necessary ability in a specialty, must he give up everything and start in again as if he were at the end of his first year's internship? Is the experience of general practice worth nothing? Why can he not be supplied with a list of the necessary books and medical journals for that specialty and study while still in practice? To do this he will have to sacrifice any leisure time he may get. Willingness to do this should prove the seriousness of his intent. Then if at examinations he proves that he has a satisfactory grasp of the medical literature of that specialty, why can he not take a shorter course or courses of training before he tries for certification or the fellowship? Such an arrangement would do much to establish a true sense of democracy within the profession and eliminate much of the contention between the specialist and the general practitioner.

As we noted at the beginning, more and more attention is being given to general practice. At one time there were certain pessimistic souls who thought they foresaw the extinction of general practice. Now all that is changed, and the field of the general practitioner is wider and brighter than ever. A lot of it is new and he has not been trained for it. This is the purpose of outlining a more comprehensive scheme of education for the general practitioner of the future.

MEDICAL LICENSURE IN CANADA

W. BRAMLEY-MOORE, M.D.,
Edmonton, Alta.

THE BRITISH NORTH AMERICA ACT left the control of health and health matters to the provincial governments. It was necessary, therefore, that each province in Canada make provision for the granting of a licence to practise medicine within its territories, and for the disciplining of those persons so licensed. Legislation has been enacted in each province establishing a College of Physicians and Surgeons or a Provincial Medical Board. The title of the legislation varies somewhat from province to province, but it is generally known either as the Medical Act or the Medical Profession Act.

The legislation provides for the setting up of a Council of the College or of a Medical Board. In some provinces, this executive body is elected by the members of the profession practising within the province. In other provinces, the Council or Medical Board is made up of some elected representatives of the profession and some appointed by the government and by universities having medical schools within the province. The Council or Medical Board is responsible for the carrying out of the requirements of the Medical Act. It is responsible for the assessment of the qualifications of individuals applying for licensure, for determining whether or not they are of good moral and ethical character, for the maintenance of discipline within the profession, and generally for ensuring that a high standard of medical care is provided within the province.

The Council may make regulations providing for the management of the College, prescribing the fees to be paid by applicants for registration, and, if deemed advisable, designating different classes of applicants and prescribing different fees for different classes; determining the professional qualifications and experience, including internship, and evidence as to professional conduct and evidence of good citizenship required of a candidate for registration. Each member of the College is required to pay to the registrar or such other person as he nominates such annual fee as may be determined by Council. A member may be suspended for non-payment of annual fees.

The Council has wide powers of disciplining the members of the College. The detail of these powers varies between provinces, but in general the Council is empowered to investigate any complaint against a member in respect to his conduct, professional or otherwise. If the member is found to be guilty of a misdemeanour, the Council may order punishment varying from a reprimand, fine, or suspension to erasure of the member's name from the register. Should one's name be erased for disciplinary reasons from a provincial register, it must also be erased from the Canadian Medical Register.

Licensure in one province does not confer the right of the medical practitioner so licensed to obtain a licence to practise in any other province. Recognizing the need for a common standard throughout Canada, the profession asked the federal government to establish an organization that is now known as the Medical Council of Canada. The objects of this organization are to set up qualifications which would be acceptable in any province. While some provinces recognize certain qualifications other than the Medical Council of Canada, any doctor who decides to locate in Canada is best advised to become a licentiate of the Medical Council of Canada. By so doing, he would meet the basic requirements of every province and would be free to apply for a licence in any province.

In the subsequent paragraphs, the regulations relating to the various provinces have been set out. It should be stressed that these regulations are subject to amendment and can only serve as a guide to persons seeking licensure in a province. The Registrar of the provincial licensing body should be contacted in order to obtain the most recent and more detailed information.

MEDICAL COUNCIL OF CANADA

The Medical Council of Canada was established on November 7, 1912, by the Canada Medical Act, mainly through the efforts of Sir Thomas Roddick, of McGill University, an eminent surgeon and parliamentarian. Its purpose is to conduct examinations in English and French leading to the award of the diploma of Licentiate of the Medical Council of Canada (L.M.C.C.), or licencié du Conseil Médical du Canada (L.C.M.C.), and to enrolment on the Canadian Medical Register; its licentiates are eligible for registration by the provincial medical councils upon payment of the necessary fee and

compliance with the regulations of the latter as to character and citizenship.

The Council itself consists of the following: three members appointed by the Governor in Council, two elected by each provincial medical council, one from each university having a medical school, and three elected by the homœopathic practitioners. It employs a main board of examiners who set and mark the written papers, and a board of clinical and oral examiners, distributed among the various examining centres. Members of Council do not themselves act as examiners.

All persons in order to become registered must pass the Council examination, except that there is a special dispensation under which a practitioner who was registered in a province before November 7, 1912, may become registered without examination upon meeting certain conditions prescribed by the Council and paying the fee. Any person graduating in medicine on or after January 1, 1954, in addition to passing the examination, must submit evidence that he has completed one year of satisfactory internship in a hospital or hospitals approved by the licensing authority of the province in which he is seeking licensure.

The subjects of examination are as follows: medicine, including therapeutics; surgery, obstetrics and gynecology, pathology and bacteriology, public health and preventive medicine.

The examinations are written and oral, and in medicine and surgery, clinical as well.

At the present time, the subjects for examination are under review and certain changes may be recommended and instituted by 1956.

The examinations are held in both the French and English language. In French, the examinations are held in Montreal and Quebec. The examinations in English are held at several centres across Canada in the spring and the fall. A candidate who fails in not more than two of the subjects may present himself at a later examination in the subjects in which he has failed. A candidate who fails in more than two subjects must be re-examined in all subjects.

The whole examination, or the written examination only, may be taken before the period of internship when the degree in medicine is granted by the medical school before the period of internship. When the written examination only is taken, candidates are notified of any failure to obtain 50% in a paper.

Most of the Canadian medical schools have arrangements with the Council under which they accept the Council examinations, in whole or in part, as their own final examinations for graduation in medicine. Under this plan the papers are marked first by the university examiners. Arrangements differ considerably at the various medical schools; in some, for instance, the oral and clinical examinations are taken a year later than the written ones. Candidates should, therefore, apply to their own schools for detailed information.

To be admitted to the examinations of the Medical Council of Canada, the candidate must submit to the Registrar of the Medical Council evidence that he is either licensed to practise in a province or that he has complied with the preliminary qualifications of a province leading to licensure in it. In the latter event, the province issues what is known as an enabling certificate. Provincial requirements relating to the issuance of an enabling certificate are outlined under the sections relating to provincial licensure. Interim certificates are issued to students attending Canadian medical schools that have arrangements with the Council for the taking of the Council examinations as their final examinations.

Examination candidates are required to forward the following documents to the Registrar, Medical Council of Canada, 180 Metcalfe Street, Ottawa 4, Ontario, at least three weeks before the first day of the examination:

1. Completed application form (obtainable on request).
2. Enabling certificate from a provincial medical council.
3. Statutory declaration of identity (on the back of the enabling certificate).
4. Internship certificate from a provincial medical council (applicable to graduates of 1954 and later).
5. Draft for the necessary fee in Canadian funds made payable to the Medical Council of Canada. Candidates from the Universities of Alberta and Dalhousie who are admitted to written examinations only, shall pay a fee of \$35, the balance of \$65 to be paid when they take their oral and clinical examinations.
6. Two unmounted, well-finished photographs, such as used in passports, of head and shoulders, two inches by three inches with signature on the back.

BRITISH COLUMBIA

The governing legislation of British Columbia is an act respecting the practice of medicine and surgery, commonly known as the Medical Act. This act provides for the establishment of the College of Physicians and Surgeons of British Columbia. It also provides for the establishment of an elected Council to govern, control and administer the affairs of the College.

A doctor who is applying for registration shall complete the prescribed form and fulfil the following requirements:

1. An applicant must be a graduate of a medical school approved by the Council of the College of Physicians and Surgeons of British Columbia.
2. An applicant must be a licentiate of the Medical Council of Canada.
3. An applicant shall present a certificate of having completed twelve months of rotating internship in a hospital approved by the Council.
4. An applicant, not being a Canadian or a British subject, shall have filed intention of becoming a Canadian citizen, and produce documentary evidence of having done so. An applicant, not being a Canadian citizen, shall produce his passport and visa.
5. An applicant must be able to read, write and speak the English language.
6. An applicant shall be required to make a personal appearance before the Committee on Registration and produce original documents regarding his qualifications.
7. Applicants are advised that it may require sixty days for completion of registration procedure outlined herewith.

Medical graduates who are accepted by a hospital in British Columbia should complete their registration or be covered by an interim certificate. Interim certificates granted to interns may not be utilized for any form of practice outside the confines of the specific hospital for which that certificate has been issued.

Applications for interim certificates are submitted to the Registrar of the College by the hospital concerned. An applicant is required to complete the prescribed form, and appear in person before the Committee on Registration. He must be a graduate of a medical school approved by the Council of the College of Physicians and Surgeons of B.C. Interim certificates are issued without charge.

To obtain an enabling certificate to write the examinations of the Medical Council of Canada, the applicant must complete the prescribed form and fulfil the following requirements:

1. An applicant must be a graduate of a medical school approved by the Council of the College of Physicians and Surgeons of B.C. An examination in the basic sciences may be required.
2. An applicant shall present a certificate of having completed twelve months of rotating internship in a hospital approved by Council.
3. An applicant must be able to read, write and speak the English language.
4. An applicant shall be required to make a personal appearance before the Committee on Registration and produce original documents regarding his qualifications.
5. Applications must be submitted to the Registrar of the College of Physicians and Surgeons of B.C. not later than ninety days prior to the date of examination of the Medical Council of Canada.

ALBERTA

In the Province of Alberta, the enabling legislation is known as an act respecting the medical profession, cited as the Medical Profession Act. As in British Columbia, the act provides for the establishment of a College of Physicians and Surgeons, Province of Alberta. It also provides for the administration of the College by an elected Council.

Educational standards for licensure are those approved and set out by the University of Alberta.

The following may apply for licensure:

1. Graduates in medicine from the University of Alberta who have completed one year of satisfactory internship.
2. Licentiates of the Medical Council of Canada.
3. Graduates of British medical schools, registered and in good standing with the General Medical Council of Great Britain. Persons listed on the Commonwealth and Foreign List of the General Medical Register may be required to submit their documents, in person, to the Registrar of the University of Alberta.
4. Diplomates of the National Board of Medical Examiners of the United States of America, provided that they are licensed and in good standing in one of the states.
5. All other persons are required to have their documents assessed by the University of Alberta and to comply with such regulations as may be required of them by the University. At present these regulations are:
 - (a) Submission in person of documentary evidence of training to the Registrar of the University of Alberta.
 - (b) Satisfying the University of Alberta as to their knowledge in the basic medical subjects by examination.
 - (c) The completion of one year of general internship in an approved hospital.
 - (d) The passing of the examinations of the Medical Council of Canada.

In addition to having the necessary educational qualifications, applicants for licensure must complete the prescribed form, submit evidence of good character and of good standing in any other province or state in which they may be registered, submit a photograph and the required fee. The applicant must be interviewed either by the Registrar of the College or by a member of the Council of the College.

Enabling certificates to write the examinations of the Medical Council of Canada are granted to medical students at the University of Alberta, to bona fide residents of the Province of Alberta attending other Canadian medical schools, to persons eligible for a licence to practise in Alberta, and to other persons who have complied with such regulations as may be required of them by the University of Alberta. A personal interview may be requested.

Persons desiring to intern in an Alberta hospital to do their year of compulsory internship must be able to submit evidence that they would be eligible to have their names placed on the Canadian Medical Register, or to be admitted to the examinations of the Medical Council of Canada. Persons serving as residents or in a similar capacity in hospitals are required to take out either full registration or obtain a licence under special regulations relating to residents.

SASKATCHEWAN

In the Province of Saskatchewan, legislation provides for the administration of the Medical Act by a Council of the College of Physicians and Surgeons. The Council is one elected by the members of the profession. It has general powers regarding the licensing and disciplining of the medical men in the province.

Graduates from an approved school of medicine who possess the L.M.C.C. certificate may apply for registration in Saskatchewan by satisfactorily completing and submitting the following:

1. An application form supplied by the College.
2. Medical diplomas and L.M.C.C. certificate for inspection and recording together with any qualifications such as certification in a specialty, or the like, which the physician may wish to have recognized by the College.
3. Two suitable names for character reference, or if registered with another province, a certificate of good standing from that province.
4. The required fees.

Under Section 29, Sub-Section D of the Medical Profession Act, any registered medical practitioner of the United Kingdom, which is to say, any practitioner who is registered for the time being in the Medical Register kept by the General Council of Medical Education Registration of the United Kingdom, by virtue of any qualification or qualifications granted in the United Kingdom or Eire, and who satisfied the Registrar by the proper evidence that he is so registered, proves to the Council that he is in good standing as a medical practitioner and is of good character, may apply for registration in the Province of Saskatchewan by reciprocity. Under Sub-Section E, any medical practitioner registered in the Medical Register of any incorporated body of medical men in New Zealand, exercising powers similar to those confirmed to the Medical Profession Act upon the College of Physicians and Surgeons of Saskatchewan who is a graduate of a school or college of medicine and surgery in the above country and approved by the University of Saskatchewan, where by law similar registration to practise medicine is granted to any person registered under our act, and who satisfies the Registrar that he is so registered, produces to the Registrar a diploma of registration from such school or college, proves to Council that he is the person named in the diploma and is in good standing as a medical practitioner and is of good character, may also apply for registration by reciprocity. A similar procedure to regular registration is followed as regards documents and fees.

Provisional registration to do locum tenens for a duly registered practitioner during his temporary absence from his practice may be issued to persons who do not possess regular registration with the College.

This registration is valid for a period of six months for locum tenens purposes only, and may be renewed for a further period of six months on payment of an additional fee for each renewal. A physician holding provisional registration may, upon application, have it changed to regular registration upon paying the balance of the regular registration fee before his provisional registration expiry date is reached, provided he has the qualifications required for regular registration.

The requirements for provisional registration for locum tenens are as follows:

1. Completion of an application form supplied by the College.
2. Submission of the medical diploma and L.M.C.C. certificate for inspection and recording.
3. Two names for character reference, or if registered in another province, a certificate of good standing.
4. A letter requesting that a locum tenens licence be issued to the applicant from a duly qualified member of the College of Physicians and Surgeons in practice in Saskatchewan, certifying to the Registrar that he is unable to obtain the services of a duly registered member as a locum tenens during his proposed temporary absence from his practice.

The fee for registration is \$25.

Persons desiring an enabling certificate to write the examinations of the Medical Council of Canada are required to make application to the Registrar of the College of Physicians and Surgeons. Graduates from medical schools other than in the United Kingdom and the United States may have their application considered on individual merit. A statement of complete educational and professional experience with supporting documents must be submitted. The candidate may be required to pass examinations in the basic medical subjects. Upon approval of his educational qualifications, the applicant is directed to one of the four major hospitals in Saskatchewan, where he must serve a one-year internship. The enabling certificate may be granted by the Council of the College when the applicant has satisfactorily completed these requirements.

MANITOBA

The Medical Act of Manitoba provides for the establishment of the College of Physicians and

Surgeons of Manitoba. The Council of the College is composed of two members chosen by the Faculty of Medicine of the University of Manitoba and a number of elected representatives from amongst the profession. Graduates of the Faculty of Medicine, University of Manitoba, are eligible for full registration and may be eligible for temporary licence without further examination.

Registrants of the General Medical Council (United Kingdom), the medical boards of South Australia or New South Wales (Australia) and the Medical Council of New Zealand may, if citizens who acquired medical training and qualifications in acceptable institutions in those countries, be eligible for reciprocal registration, or for temporary licence without further examination.

Graduates of other approved medical faculties in Canada, the United States of America, or other countries must be licentiates of the Medical Council of Canada. Applicants for the enabling certificate to write the examinations of the Medical Council of Canada should present detailed information respecting matriculation and medical course. Assessment in the basic science subjects is carried out by the Credentials Committee of the University of Manitoba, and examinations may be required in any or all four subjects: anatomy, biochemistry, physiology and bacteriology (combined). Applicants may be asked to write the examinations of the fourth year, Faculty of Medicine, University of Manitoba.

All candidates must present evidence of having satisfactorily served not less than twelve months in a resident medical capacity (internship). A candidate may be personally interviewed prior to or at the time of writing the Medical Council examinations.

All applications must be in writing accompanied by original diplomas or verified copies. In addition, each applicant is required to produce evidence of identity, photograph, birth certificate, naturalization papers or documentary evidence of intention to become a Canadian citizen, passport or visa, if requested.

A certificate of licence (temporary) is available under well-defined conditions to those who are otherwise qualified for registration, and who are employed as members of Her Majesty's Permanent Forces, Red Cross Blood Transfusion Service, and graduate interns employed full-time in a Manitoba hospital. Certificates for applicants employed by the federal or provincial governments, or as locum tenens for another physician, are valid only for twelve months.

ONTARIO

The College of Physicians and Surgeons of Ontario is incorporated under a provincial act

known as the Medical Act. This act provides for a Council of the College composed of the Minister of Health; one member chosen from every university, college or body in Ontario which is authorized to conduct a course or courses in the science and art of medicine and to grant degrees in the same; one member resident in Ontario elected by the licensed practitioners in homœopathy; and ten members elected from amongst and by the registered members of the medical profession.

To obtain a licence to practise medicine in the Province of Ontario, the candidate must have passed the examinations of the Medical Council of Canada. Effective 1958, in addition to having passed the examinations of the Medical Council of Canada, evidence of having had one year of graduate internship in an approved hospital will also have to be submitted.

An applicant for licensure must satisfy the Council that he is of good character and in good standing with any other licensing body with which he may be registered, and pay the required registration fees. The present registration fee is \$50. An annual fee must be paid to maintain registration.

There are special regulations relating to the registration of interns, postgraduate students in medicine, medical officers of the permanent forces, and federal appointees to the Department of Indian Affairs.

The Province of Ontario requires student registration with the College. Student educational requirements of the College must be satisfied, and the student duly registered at the beginning of the study of medicine, or at the completion of a premedical course. All Ontario students entering upon the study of medicine in Canada or elsewhere must present a birth certificate and be registered under the names given on the said certificate.

Detailed information of student registration may be obtained through the office of the Registrar of the College of Physicians and Surgeons of the Province.

To obtain an enabling certificate to write the Medical Council of Canada examinations, the requirements are:

1. Student registration certificate.
2. Proof from the applicant's university of having fulfilled curriculum requirements.
3. Certificate of Canadian or British citizenship, and a certified unmounted photograph.
4. The payment of a fee of \$5.

If any special consideration is required by the Committee on Education and Registration, the application must be in the hands of the Registrar not later than October 15 or March 15.

Physicians who are not British or Canadian citizens must fulfil the following requirements before being granted an enabling certificate:

1. Present to the Registrar of the College a diploma in the original with certificates and other evidence of premedical and medical education. The Committee on Education and Registration must be able to satisfy itself that these certificates give ample evidence that the premedical and medical education of the applicant meets the equivalent standards required for the medical profession in Canada. If the Committee is not so satisfied, the application for an enabling certificate will not be granted.

2. The applicant must have adequate proficiency in the English language and must have passed an examination in this subject set by the Extension Department of the University of Toronto. Special classes of instruction are arranged by the Extension Department of the University of Toronto in medical and standard English.

The applicant must have an adequate knowledge of the basic sciences, and must pass examinations in these subjects. These examinations are held in the months of March and November.

3. The applicant must present the following information and documents:

- (a) satisfactory statement as to how he entered Canada, naming sponsor if any;
- (b) a satisfactory curriculum vitae;
- (c) a letter of good character from a responsible person;
- (d) an official birth certificate; passport; certified unmounted photograph;
- (e) proof of declaration of intention to become a Canadian citizen.

4. The required fee.

5. Proof of having spent a minimum of one year in a satisfactory rotating internship in a general hospital in the Province of Ontario, approved by the College. This internship must include a period of three months in medicine, three months in surgery, three months in obstetrics and gynaecology, and three months in anaesthesia, emergency and the specialties.

When the above requirements have been completed, it is necessary for the applicant to make a personal appearance before the Committee on Education and Registration, which meets twice yearly; the applications for enabling certificates must be submitted not later than September 13 and February 12.

After July 30, 1959, the College of Physicians and Surgeons of Ontario will require Canadian citizenship for an unqualified licence to practise in Ontario.

QUEBEC

The College of Physicians and Surgeons, Province of Quebec, is set up under the Quebec Medical Act. The College is administered by a Provincial Medical Board of 21 members, of whom 18 are elected by the members of the College, and one by each of the three medical schools in the Province.

Sections 30 to 34 of the act set out regulations relating to the admission to the study of medicine in the province. Briefly, no one may be admitted until he has obtained a certificate of

competency from the Provincial Medical Board. Applicants must be Canadian citizens.

Persons entitled to such certificates are:

1. Every holder of the degree of Bachelor of Arts or of Science conferred upon him by any university of Canada recognized by the College.

2. Those who have passed successfully the examinations required under the regulations.

3. Those who have passed successfully the preliminary examination acceptable as equivalent by the Provincial Medical Board.

The Medical Act also provides that the study of medicine shall follow a five-year course, including a year of resident medical studentship in an approved hospital.

To be admitted to the practice of medicine, candidates must either:

1. Pass the examinations of the Medical Board of Examiners of the Province, or

2. Be licentiates of the Medical Council of Canada.

Applicants for registration must be Canadian citizens and must be of good moral and ethical character.

To obtain an enabling certificate to write the examinations of the Medical Council of Canada, the applicant must be a Canadian citizen, and have complied with all the regulations leading to the provincial licence in Quebec.

NEW BRUNSWICK

The New Brunswick Medical Act establishes the New Brunswick Medical Society. This Society is the counterpart of the College of Physicians and Surgeons in other provinces. It is administered by a medical council composed of nine members, four of whom are appointed by the Lieutenant-Governor in Council, and five elected by the members of the Society.

To obtain licensure in the Province of New Brunswick, a candidate must have complied with the following requirements:

1. The applicant must have spent at least two years in arts, science or premedical studies in a university recognized by this Council.

2. He must have graduated from a medical school also recognized by this Council.

3. He must pass the examinations of the Medical Council of Canada.

4. He must furnish a declaration of identity.

5. He must also furnish a certificate of good standing from the province in which he last practised.

To obtain an enabling certificate to write the examinations of the Medical Council of Canada from New Brunswick, the applicant must have

completed the required premedical and medical studies and must either be a Canadian citizen or have been born within the British Isles.

NOVA SCOTIA

In the Province of Nova Scotia, the Medical Act provides for the incorporation of a Provincial Medical Board. This Board consists of 13 members, seven of whom are appointed by the Lieutenant-Governor in Council, and six elected by the Medical Society of Nova Scotia.

In Nova Scotia, persons desiring to study medicine for the purpose of qualifying themselves to practise medicine in the Province must have their name entered on the Medical Students' Register. To have his name placed on the Register, the applicant must produce:

1. A certificate from the examiners appointed by the Board showing that he has passed the preliminary examinations in the subjects prescribed by the Board; or

2. Evidence satisfactory to the Board of having passed examinations that in the opinion of the Board are at least equivalent to those preliminary examinations; or

3. A certificate that he has been regularly admitted to the study of medicine in a school of medicine recognized by the Board.

To obtain a licence to practise, the applicant must be 21 years old and must satisfy the Board that:

1. (a) His name has been registered in the Medical Students' Register.

- (b) After admission into a school of medicine recognized by the Board, he has followed medical studies during a period of not less than five academic years. During these five years he must complete courses as set out by the board, and have had a satisfactory training as an intern in a hospital acceptable to the Board.

- (c) He has satisfactorily passed an examination in the various branches specified, before the professional examiners appointed under the Medical Act, and has received from the Board a certificate of qualification; or

2. He is a licentiate of the Medical Council of Canada; or

3. He is duly registered by the General Medical Council of Great Britain.

To obtain an enabling certificate to write the examinations of the Medical Council of Canada, the applicant must have complied with the educational requirements leading to licensure in the Province. Applications from graduates of European medical schools are dealt with on their merits. All applicants would be required to serve one year of satisfactory internship in a hospital approved in Canada or the United States.

PRINCE EDWARD ISLAND

The medical law of Prince Edward Island incorporated the Prince Edward Island Medical Society. This Society is administered by a council

of seven elected by the members of the Society.

To obtain a licence to practise in Prince Edward Island, the candidate must either be a licentiate of the Medical Council of Canada or registered with the General Medical Council of Great Britain.

NEWFOUNDLAND

The Newfoundland Medical Board, established under the Newfoundland Medical Act, has the powers of licensure and discipline of the medical profession. The members of the Board hold office during good behaviour, or until voluntary resignation, subject to removal at any time by the Governor in Council on the petition of five members of the said Board. Vacancies on the Board are filled by the registered medical practitioners of Newfoundland by an election in a manner set out by the Board.

Persons registered and in good standing with the General Medical Council of Great Britain may obtain reciprocal registration in Newfoundland.

For other registrants, the Newfoundland Medical Board requires the applicant to be a licentiate of the Medical Council of Canada or a licentiate of the Medical Society of Newfoundland, to have had an adequate matriculation, and to be a graduate from an approved medical school having a five-year course of which one year of rotating internship is taken as one.

Enabling certificates to write the Medical Council of Canada examinations are granted to persons eligible for licensure in the Province or having had the training in respect to matriculation, medical school and internship leading to licensure in the Province.

NORTHWEST TERRITORIES

In the Northwest Territories, the medical profession is licensed and disciplined under the Medical Profession Ordinance. This Ordinance provides that the Commissioner of the Territories shall maintain a Register and shall enter the names, addresses and qualifications of all persons who are entitled under the Ordinance to be registered in the Register. The Ordinance also provides for disciplinary action against medical practitioners licensed and practising within the Territories.

To obtain a licence to practise in the Northwest Territories, the applicant must submit to the

Commissioner a certificate from the Medical Council of Canada showing that he has been registered in the Canadian Medical Register. He must also satisfy the Commissioner that he is of good moral character, and pay the required fees.

Temporary permits may be issued to practise medicine in such parts of the Territories, for such periods of time, upon payment of such fees and upon such terms and conditions as the commissioner may specify in the permit, to any person who has completed at least a four-year course of study in medicine or surgery or both at a college or school of medicine of recognized standing and has received a certificate of qualification from such college or school, and has satisfied the Commissioner that he is of good character.

COMMENTS

Canadian medicine generally has the reputation of having one of the highest average standards in the world. We feel that the system of licensing is greatly responsible for this. Because of the excellent relationship between the licensing authorities and the medical schools brought about by the Medical Council of Canada, with the Medical Council of Canada acting as an inspecting body of the products of the medical schools for the licensing authorities, we can continue to be assured of the maintenance of our standards.

Every medical graduate has an opportunity to have his qualifications assessed and his knowledge examined. Having satisfied the requirements of the impartial examining board of the Medical Council of Canada and being of good character, he becomes eligible to obtain a licence in one province or all. Graduates from foreign medical schools are advised to have their documents assessed early after arrival in Canada by the licensing authorities in the province in which they reside. Once having started proceedings, we would stress the importance of continuing under the jurisdiction of the same authority until the L.M.C.C. has been obtained.

501 Alexandra Bldg.

I wish to thank the Registrars of the various Provincial Licensing Bodies and the Registrar of the Medical Council of Canada for their co-operation in making information available to me. I have appended their addresses and would recommend that any individual considering licensure in a province contact the Registrar to obtain the latest information in respect to regulations.

APPENDIX ADDRESS OF PROVINCIAL LICENSING AUTHORITIES

Registrar
College of Physicians and Surgeons
Province of Alberta
501 Alexandra Building
Edmonton, Alberta

Registrar
College of Physicians and Surgeons
Province of British Columbia
1807 West 10th Avenue
Vancouver 9, British Columbia

Registrar
College of Physicians and Surgeons
Province of Manitoba
604 Medical Arts Building
Winnipeg 1, Manitoba

Registrar
Medical Council of New Brunswick
182 Princess Street
Saint John, New Brunswick

Registrar
Newfoundland Medical Board
P.O. Box E5121
St. John's, Newfoundland

Registrar
Provincial Medical Board
191 Hollis Street
Halifax, Nova Scotia

Registrar
College of Physicians and Surgeons
Province of Ontario
174 St. George Street
Toronto 5, Ontario

Registrar
Medical Board of Prince Edward Island
Charlottetown, P.E.I.

Registrar
College of Physicians and Surgeons
Province of Quebec
1896 Dorchester Street West
Montreal 25, Quebec

Registrar
College of Physicians and Surgeons
Province of Saskatchewan
415 Birks Building
Saskatoon, Saskatchewan

Commissioner
Northwest Territories
Ottawa, Ontario

AMERICAN HEART ASSOCIATION EDUCATIONAL AIDS

Three newly developed educational aids are being offered to physicians and medical teachers by the American Heart Association. They include audio-visual kits for home and office use, three-dimensional visual kits for physicians, and a new functional heart model for use in teaching.

The audio-visual kits are known as "Cardiac Clinics" and are intended mainly for the use of physicians who do not have facilities for continued medical education readily available. The kits were originally developed at the University of Utah College of Medicine and now are being distributed nationally for the first time through Heart Associations.

THE MEDICAL FACULTIES OF CANADIAN UNIVERSITIES

H. E. MACDERMOT, M.D., *Montreal*

THE FOLLOWING ACCOUNT of Canadian medical faculties is intended mainly to show their establishment chronologically; and therefore includes only the minimum of detail.

There was no form of organized medical teaching in Canada until the early part of the 19th century. Until then the only medical training in the country was that of the apprenticeship system, and the medical practitioners were made up of those who had been taught in medical schools in Great Britain or Europe, or in the United States; many were frankly untrained, even as apprentices.

The desire for local sources of medical education gradually developed as more well-trained men came to this country. It first took shape in 1824 when the Montreal Medical Institution was formed in connection with the Montreal General Hospital in Montreal. The hospital had been built two years previously, and at the time of its opening the four members of its attending staff, all Edinburgh graduates, announced in the following words their intention to establish a medical school:

"The medical officers of the Montreal General Hospital, having seen the great difficulties which the student of medicine in this country has to encounter before he acquires a competent knowledge of his profession; knowing the great inconvenience resulting to many from the necessity at present existing of spending several years in a foreign country to complete a regular medical education, and being convinced of the advantage which would result from the establishment of a medical school in this country . . . have met to consider the possibility of founding such an institution in this city."

The school immediately attracted pupils. Lectures were given in a separate building, and clinical instruction was given in the wards. Actually, one of the original reasons given for the building of the hospital was that it should be used for teaching, and this purpose was faithfully pursued. The school, however, had no university affiliation or endowment, and was therefore denied the right to grant licences to practise, although its four original lecturers had been named as a provincial board of examiners for such licences. After five years, however, a fortunate combination of circumstances arose. McGill University, although in existence for some years, had not carried on any active teaching, and was for that reason in danger of losing the

bequest of its founder. In 1829, by mutual agreement, the M.M.I. was "engrafted" on the University as its Medical Faculty, and the first Canadian degree in medicine was granted in 1833. The school of course lost its identity, but the faculty for many years operated independently of the University, retaining control of its own finances until as late as 1905.

In Upper Canada (Ontario) the first attempt to found a medical school was also made in 1824. In that year Dr. Rolph and Dr. Duncombe opened a school in St. Thomas, but it functioned for only two years. Rolph gave private classes again from 1832 to 1837, when political activities interrupted him. In 1843 he began again and laid the foundations of what became the Toronto School of Medicine.

The University of Toronto itself was only finally established in 1844, after 17 years of controversy and negotiation, and in the same year a Faculty of Medicine was formed. This operated until 1853, when the faculty was abolished by the Hincks Bill on grounds which are not quite clear. The reason was a supposed popular sentiment against state aid for a lucrative profession, but apparently there was some inconsistency in this, as state support for medical schools continued for some years.

At any rate, the Medical Faculty was inactive in teaching from 1853 to 1887, although still granting degrees. In this period medical training was carried on by proprietary schools, notably Rolph's establishment already mentioned, the Medical Faculty of Trinity College and the Medical Faculty of King's College. The arrangement was not ideal, but some of the best men in the Province taught in these schools.

In 1887 the Faculty of the U. of T. was re-organized, and the staff of the then existing Toronto School of Medicine became the Faculty of Medicine of the University. Later still, in 1902, the Trinity College Faculty of Medicine was amalgamated with the University.

The third Faculty of Medicine to originate in a private school was that of the Université de Montréal. This was the product of the union of L'Ecole de Médecine et de Chirurgie de Montréal, the first French school to be established in Montreal, and l'Université de Laval de Montréal, originally a branch of l'Université de Laval de Québec. L'Ecole de Médecine et Chirurgie was established in 1843, the original founders all being English physicians. The Montreal branch

of Laval University was only founded in 1879. In 1891 these two schools united, and in 1919 l'Université de Montréal was incorporated. These few sentences cover the history of long-drawn-out struggles and negotiations, which can best be followed in the account by the late Dr. L. D. Mignault, Secretary of the Medical Faculty (*L'Union Méd.*, 55: 444, 1926).

The Medical Faculty of Laval University of Quebec was formed by a group of teachers from the staff of the Incorporated School of Medicine of Quebec. This had been in existence since 1847, and it had much clinical material for teaching, as there were two hospitals in Quebec at the time, the Hôtel-Dieu and the Marine Hospital. In October 1852 five of the teachers of this school were asked to constitute the Faculty of Medicine of Laval University; this they did, and were given professorial rank.

These four medical faculties, then, all arose from private schools which eventually were absorbed into university faculties, these in their turn being almost entirely dependent on the men in the schools. Two other schools in Montreal may be mentioned, the St. Lawrence School of Medicine, founded in 1850 and closed in 1852, and the Medical Faculty of the University of Bishop's College, which was founded in 1871 and amalgamated with McGill in 1905. Both of these had been established by medical men "whose energies found no outlet on the [necessarily limited] teaching staff of McGill University" (Abbott). There were excellent teachers in both of them, some indeed rising eventually to the highest rank in the McGill Medical Faculty, but neither of them was strong enough to continue to meet the growing demands of medical education. It may be added that Bishop's was the first medical school in Quebec to admit women students in medicine. McGill University Faculty of Medicine first accepted women as medical students in 1919.

The Medical Faculty of Queen's University was established in 1854. In 1865 it was reorganized as the Royal College of Physicians and Surgeons in affiliation with the University, but resumed its original status in 1891. In 1880 co-education was arranged in the medical courses. In 1883 a separate Women's College was opened and affiliated with Queen's, but this was closed in 1894, and the admission of women to the faculty was not resumed until 1943.

The Medical Faculty of Dalhousie University

was organized in 1867, giving partial courses until 1870, when a complete course was inaugurated. Due to financial difficulties of the University the medical school was detached in 1875 and incorporated as the Halifax Medical College. In 1885, however, this College again was drawn into Dalhousie, with the students taking the University examinations, and in 1911 Dalhousie University once more assumed the responsibility of a full course in medicine.

The Medical Faculty of the University of Western Ontario was founded as the London Medical School in 1881 by the efforts of Bishop Isaac Hellmuth, and the first lecture was given in 1882. At first the relationship between the University and the medical school was loose—a characteristic of other Canadian medical schools at that time; the school was self-governing and independent of the University, and the Medical Faculty had no representation on the Senate. The only actual relation between the two bodies was the affiliation for the purpose of granting degrees. The faculty had complete control of its affairs and was to be allowed to build for itself, if need be, outside the University grounds.

By reorganization in 1912 the medical school became fully integrated with the University, and the faculty agreed to grant control of the school to the Board of Governors.

The Medical Faculty of the University of Manitoba was founded in 1883 as the Manitoba Medical College. This is one of the few instances in which the medical school came into being as the result of the efforts of intending medical students. In 1882 the importunity of a group of these men in Winnipeg persuaded the College of Physicians and Surgeons of Manitoba to consider the organization of such a school, but at first the College decided that the time was not yet ripe. Next year, however, a scheme for a private medical school was announced by a newcomer to Winnipeg, and this aroused local opposition, led by Dr. James Kerr, a leading Winnipeg physician. Under his leadership a group of thirteen Winnipeg doctors gained a charter of incorporation for the Manitoba Medical College. At first they were not ready to begin teaching; their intention was only to preclude the establishment of any other schools in the Province. But the medical students-to-be resumed their insistent demands for a school, and after much effort it was opened in 1883. In spite of close association with the University of Manitoba, from

which the graduates received their degree in medicine, it was not until 1918 that the college ceased to be a separate institution. It then made a gift of all its property and equipment to the University of Manitoba, on condition that the University establish a faculty of medicine and carry on the work of medical education in an efficient manner.

The Act establishing the University of Saskatchewan was passed in 1907, and the Medical Faculty was established in 1926. Beginning with a two-year course only, it is planned within the next two years to provide for a full four-year course leading to a degree.

The University of Alberta, established by an Act of the Legislature of the Province, opened in 1908 and medical instruction began in 1913. At first this covered only the first three years. Later the course was extended to the full four years with a degree.

The Medical Faculty of the University of Ottawa was established in 1945. There had been for several years a desire to expand the facilities of the University by the addition of medical teaching. A group of Ottawa doctors met in June 1945 to plan for this development, and the faculty was formally opened in October 1945. Pre-medical classes had been offered by the University for some time, and by the time sufficient medical staff had been collected the first class was ready for medical instruction in 1948. The first class graduated in 1951. This is the first Canadian bilingual medical faculty.

The Medical Faculty of the University of British Columbia is the youngest Canadian medical faculty. The University itself has been in existence since 1915. Previously a college had been established in 1906 in Vancouver, entitled the McGill University College of British Columbia, and this with Victoria College had carried on teaching in arts and science. With the opening of the University this college ceased to exist.

From this very brief outline it will be seen that the seed of four of the present faculties was in private schools, all of which eventually found the burden of medical education to be too onerous. This became evident even before medicine had begun to expand very much. It may be worth while to recall the comment made by Osler at a time when the University of Toronto was in

process of absorbing the Trinity College Faculty of Medicine, as already described:

"The day has passed," Osler said, "in which the small school without full endowment can live a life beneficial to the students, to the profession or to the public. I know well of the sacrifice of time and money which is freely made by the teachers of those schools, and they will not misunderstand my motives when I urge them to commit suicide, at least so far as to change their organizations into clinical schools with affiliation with the central university."^{*}

The teaching of medicine will probably undergo many more changes in the future, but it is at least doubtful whether there will be any revival of private medical schools.

^{*}From "The Master Word in Medicine," *Æquanimitas*, etc., Wm. Osler, 1903.

4100 Côte des Neiges Rd.

PERMANENCE OF ANTI-TETANUS IMMUNIZATION

The prophylactic injection of 1,500 units of tetanus antitoxin has become standard practice since the British Army experience of World War I, but the sometimes severe reaction to the foreign protein has raised the question whether the risk of tetanus is as great as that of a fatal reaction to horse serum. A great proportion of the population has now received active immunization against tetanus, a method which has been proved by the experience of the United States Army in World War II. The present study at Johns Hopkins was made to try to decide whether and when a booster dose of toxoid or antitoxin was necessary.

Serum antitoxin levels in individuals whose last tetanus toxoid injection had been given 5 to 11 years ago were found to be over 0.05 unit in 75% of cases, somewhat higher in those inoculated during the past five years, and not detectable in those who had not been given toxoid. Giving a booster dose of 0.5 ml. of tetanus toxoid to those who had a detectable antitoxin level caused a rise within five days to high levels. On the other hand, 1,500 units of tetanus antitoxin caused no more rapid rise, and the rise lasted for a shorter period. A study of 169 cases of clinical tetanus in Baltimore hospitals in 1929 to 1953 showed that 28 patients had received antitoxin at the initial injury but the mortality was the same as in those who had not received it. In a city of one and a half million, seven developed tetanus yearly, of whom one had received prophylactic tetanus antitoxin. It is suggested that antitoxin results in no inhibition of the growth of the clostridia after the horse serum has been excreted or neutralized. Two cases of tetanus were found in persons who had been actively immunized, and in both the disease was mild and of brief duration. Perhaps the active growth of tetanus clostridium is sufficient booster in a patient who has been inoculated previously.

It is recommended that a booster dose of toxoid be used as prophylaxis for those who have served in the Armed Forces or who have a reliable history of active tetanus immunization. Efforts should be continued to increase the proportion of the population enjoying basic immunity to tetanus. The value of the prophylactic injection of antitoxin is questioned. A patient who is sensitive might be treated for tetanus by transfusions of blood from an individual with a high antitoxin titre.—E. S. Stafford, T. B. Turner and L. Goldman: *Ann. Surg.*, 140: 563, 1954.

THE FOUNDING OF THE ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA*

T. C. ROUTLEY, C.B.E., M.D., LL.D.,
F.R.C.P.[C.], Toronto

LAST SPRING I ventured to suggest to the College that with the celebration of its Silver Jubilee Anniversary in the autumn of 1954 it might be of some interest to review briefly the steps which had been taken leading up to its establishment.

It would not be unreasonable to assume that a movement which had as its objective the stimulation and recognition of higher attainments in medicine might have originated in one of the medical teaching centres of Canada, but such was not the case. As far as the records disclose, the proposal was first brought to the attention of the Canadian Medical Association at its Annual Meeting in Vancouver in 1920 in the following resolution tabled by Dr. Sam Moore of Regina on behalf of the Regina and District Medical Society. (Dr. Moore was an active member of the various committees which dealt with the subject for the next seven years.)

RESOLVED:

Whereas Canada has now assumed the status of nationhood within the British Empire, and whereas the events co-incidental with the Great War have brought about a closer union and deeper appreciation between the medical men of the Old Country and those of Canada, and whereas it is desirable that the best means of stimulating and promoting advanced study of, and postgraduate work in, medicine and surgery, be adopted, to the end that as large a number as possible of the medical men of Canada should engage in such advanced studies,

Be It Resolved that it is now the opportune time to promote a closer alliance between those great institutions which are furthering and teaching the study of surgery and medicine in the Old Country with those furthering and teaching it in Canada. In furtherance of this idea It Is Resolved that a special Committee be appointed at this meeting in Vancouver, to consider the problem of founding a Canadian Royal College of Surgeons and Physicians in some way affiliated with those of British origin.

Discussion on the motion was brief and on the whole not too favourable, as several who spoke felt that the time was not ripe for such a movement in Canada. However, it was agreed that a study committee should be appointed with Dr. Hugh McCallum of London as chairman. Unfortunately, during the year which followed Doctor McCallum died, and at the Halifax meeting in 1921 his successor, Dr. Fred Marlow of

Toronto, could only report progress. Council, however, resolved that the Study Committee should be reappointed.

At the Winnipeg meeting in 1922 Dr. Marlow brought in a carefully documented report which undertook to summarize the thinking of the medical profession throughout Canada as represented in answers to questionnaires which had been sent to medical associations, medical schools, licensing bodies and some individual practitioners. On the whole, the opinions expressed for and against the establishment of a college were about equally divided, with fairly strong medical society endorsement and considerable medical faculty opposition. The following comments are taken from the report:

"A good idea, but a little premature."

"The college, if formed, should be limited to men of outstanding reputation and attainment."

"Diplomas should be limited to a small number of men who have achieved eminence in the teaching profession."

"The University of Manitoba strongly endorses the proposal and offers its unqualified support."

"The Maritimes feel that the time is not ripe for the formation of such an institution."

"The medical schools in Ontario, while expressing sympathy with the idea, have considerable doubt as to its timeliness. With this opinion McGill concurs."

"The Ontario Medical Association endorses the proposal, especially if it will promote post-graduate study."

"A few medical societies doubt the wisdom of multiplying organizations."

"The Canadian Medical Association itself might seek authority to confer fellowship degrees without the establishment of any new body."

"Laval University suggests that medical organizations presently existing in Canada be improved before starting a new one."

"The medical associations in Western Canada favour action."

In summary, it appeared that the rank and file of the profession viewed the proposal a little more favourably than those members of the profession who were engaged in teaching. This is not to say that the medical teachers who opposed were unsympathetic to the idea, but apparently they felt that the time was not ripe and that the college would die before it became firmly established.

Obviously, the Association was faced with a difficult decision, and once again fell back upon the time-honoured custom of asking the committee to continue its studies.

At the Montreal meeting in 1923 discussion on the committee's report was brief. However, one concrete proposal was offered; namely, that the Canadian Medical Association itself undertake to provide a fellowship for higher degrees. But no formal vote was taken, and once again the committee was asked to continue its explorations.

*An address delivered on the occasion of the Silver Jubilee Anniversary of the Royal College of Physicians and Surgeons of Canada, Winnipeg, Manitoba, October 22, 1954.

In Ottawa in 1924 Dr. Marlow stated that it appeared to his committee that neither the Canadian Medical Association nor the medical faculties were seriously disposed to set up the College and he recommended that the Medical Council of Canada be asked to undertake the task. Once again, no firm decision was agreed upon, other than to request the study committee to carry on.

Coming to the Regina meeting in 1925, the city in which the original proposal had been made some five years previously, it would almost appear that the profession was a bit weary of discussing the subject as no new suggestions came before the Council. However, a few speakers urged that the study committee should be continued, and that apparently was a sound proposal, as became evident at the 1926 meeting in Victoria. Here, interest was revitalized, but, curiously enough, not only in the report of the special study committee, but also in a combined report of the Committee on Education and the Special Study Committee chaired by Dr. Prowse of Winnipeg from which the following is quoted:

"It has been proposed that the English Fellowship examination be held in Canada. Merely rendering the English Fellowship more easily attainable by Canadian surgeons will not of itself immediately rid the profession of a reproach nor the Canadian public of a danger under which both are labouring in a constantly increasing measure.

"The reproach and the danger respectively lie in the fact that neither by parliamentary enactment, licensing by-law, nor popular tradition, does there exist in Canada any distinction between the general practitioner, the consulting physician or the consulting and operating surgical specialist.

"There is probably no member of this Association who does not know of lives being endangered or lost through the essaying of major surgical operations by practitioners who, though legally qualified under our present licensing laws, nevertheless for lack of special training and of surgical experience are absolutely and fundamentally incompetent in matters of surgical diagnosis and treatment.

"Your Conjoint Committee therefore proposes: Whereas it seems desirable to the Canadian Medical Association that higher standards and qualifications in the practice of medicine and surgery in Canada should be recognized by properly constituted Canadian authorities, be it resolved:

"That this Council in session appoint a special committee whose duty it shall be,

"1. To formulate plans for the organization of a College of Physicians and Surgeons for Canada.

"2. To study and outline a procedure whereby such a proposed College could receive Royal assent.

"3. To study and recommend the procedure as to the appointment of the original personnel of such a College.

"4. To devise ways and means to finance such a project.

"5. To report back to Council at the earliest possible date.

"6. Should such report be ready before the next regular meeting of Council, that a special meeting of Council be held at a suitable time and place to deal with the report."

The foregoing report which, in principle, is identical with the proposals made several years previously, was adopted without a recorded vote, and a working party under the chairmanship of Dr. David Low of Regina was appointed to proceed with the task.

At the Toronto meeting in 1927 Dr. Low's committee presented a lengthy report endorsing the proposals which had been made in Victoria the year previously. In a fighting speech, Dr. Low went on to say that various study committees including his own had gone as far as it was possible for them to go in studying the proposal; that the majority of the medical profession in Canada were in favour of the organization of a College; that his committee believed that those members of the profession, especially the medical teachers who had expressed opposition to the College, were not opposed to the basic idea, but rather doubted that the College would succeed. Dr. Low went on to say that the time for action had arrived; that a committee more centrally located should be appointed by Council and given instructions and authority to seek the necessary legislation to bring the College into being. But, once again, opposition became apparent in the debate in Council, and an amendment to shelve the matter for another year was defeated by a very small majority—22 to 19, whereupon the original motion was put and carried on a majority vote. This seemed to be the turning point. Several prominent members of the profession who hitherto had taken a dim view of the proposal said that since action had been decided upon, they would give their wholehearted support to the movement, a medical characteristic which has manifested itself more than once in Canada, and no doubt will do so in the years to come.

The next problem was to find a working party—"a shirt-sleeve committee"—which would really undertake to carry the proposal to fruition. Several men were nominated for the chairmanship, but found various reasons for declining. Then, when nominated, Dr. Fred Starr of Toronto in his characteristic fashion said, "Well, this is somebody's job, and if you wish me to do it, I'll do it." And he did, with the support of six colleagues: Doctors Alex Primrose of Toronto, L. J. Austin of Kingston, A. T. Bazin of Montreal, C. F. Martin of Montreal, A. Rousseau of Quebec and George Hale of London.

This group, with the General Secretary of the

Canadian Medical Association acting as secretary of the Committee, indeed faced a formidable task. Time and space will not permit a recital here of the long and involved procedures which occupied their attention for the next two years. Suffice it to say that a bill was prepared and the Government of the day persuaded to support it, considerable aid in this connection being provided by one of our own members, Dr. A. MacG. Young of Saskatoon, who was a member of Parliament at that time. The acquiescence of the nine Provincial Governments had to be secured, because the measure was associated with health, which under the British North America Act comes within Provincial jurisdiction. Permission to include the word "Royal" had to be sought through the proper channels. Individual Members of Parliament had to be informed so that no stone would be left unturned to smooth the way for the bill's passage, as strong objection to it on the floor of the House would only mean one thing—defeat. When all appeared to be in readiness for the first reading of the bill, some of our French-speaking colleagues desired a little more reassurance that provincial rights were not being infringed. Fortunately, a statesman in whom our colleagues had confidence—the late Senator Dandurand—was requested to study the bill. After examining it carefully, he said that he regarded the proposal as highly satisfactory and gave it his blessing. And so, without any heated debate or serious questioning, an Act to incorporate the Royal College of Physicians and Surgeons of Canada was passed and given Royal Assent on the 14th day of June 1929, just two years from the time the Council of the Canadian Medical Association decided to take action, thus bringing to a conclusion the first step in a movement which had taken nine years to go through the mill of medical thinking in Canada.

But, as has already been stated, merely the first step had now been achieved, and much, very much, remained to be done. The College had a skeleton but, as yet, no body. However, the Act took care of that situation. It provided for a gestation period not to exceed six months and appointed the General Secretary of the Canadian Medical Association as the obstetrician to preside at the birth.

Five months later, on November 20, 1929, there assembled in Ottawa 72 doctors who according to the terms of the Act were eligible to be enrolled as Charter Fellows. The session was hardly

under way when what looked like a major issue presented itself. A number of speakers felt that there should be two Colleges—one for physicians and one for surgeons — and that the meeting should break into two. However, the Act did not provide for any such contingency, and it was finally agreed to continue as one College. As the chairman was working under an Act of Parliament, it seemed proper to be guided by competent legal advice; this proved indeed to be a wise decision, as every step which was taken on that natal day had to be in conformity with proper procedure. In order that there would be no doubt about what was said and by whom, a Hansard reporter was present to record all of the discussion. It is an interesting document which the College one day might like to have placed in its archives.

As required by the Act, the Charter Fellows proceeded immediately to complete the organization (under the chairmanship of Dr. A. T. Bazin of Montreal). A council of 18 persons was appointed, with Dr. Jonathan Meakins of Montreal as the first president. As the Canadian Medical Association had underwritten the costs of setting up the College, the General Secretary was asked to act as Registrar-Secretary *pro tem.*, a post which he occupied until the College established its office in Ottawa some two or three years later. The fellowship fee, which was set at \$100, soon provided working funds for the College, thus obviating the necessity of drawing upon a loan fund of \$5,000 which had been guaranteed by the Canadian Medical Association.

But the road which lay immediately ahead was by no means strewn with flowers. Great care had to be exercised in the selection of additional Charter Fellows and in the writing of By-Laws and Regulations. No doubt there was considerable heartburning with some disappointments and misunderstandings, but, on the whole, the job was reasonably well done and the College was established on a firm foundation.

To say that the College has justified the faith of its founders would really be an understatement. There can be no doubt of the great value which this body has been, not only to the medical profession in this country but also to the people whom the profession serve, and one feels certain that in the years that lie ahead the College will continue to do its full share in helping to maintain the health of the Canadian people at the highest possible level.

MEDICAL EDUCATION TODAY

J. WENDELL MACLEOD, B.Sc., M.D.,
F.R.C.P.[C.],* *Saskatoon, Sask.*

THIS IS NOT WRITTEN for deans and professional educators or for those who have followed closely the discussions on medical education appearing with increasing frequency in our journals. Nor is it implied that a new pattern has appeared on which there is general agreement and towards which medical schools are moving as rapidly as budgets and personnel permit. It is an attempt rather to outline for the practising doctor or the teacher in a limited field certain trends in thinking and in practice on both sides of the Atlantic. These take the form of problems encountered and of solutions envisaged or actually being applied. No attempt will be made to document with references the views presented, many of which are widely held. Some reflect the viewpoints of individuals and situations encountered in a year of travel† and the discussions at annual meetings of the Association of American Medical Colleges and the corresponding gatherings of Canadian medical deans. Most of all, however, is the author indebted to his colleagues at the University of Saskatchewan in the faculties of Arts and Science, Education and Medicine. Those of the latter in particular have displayed a fine balance of idealism and practicality, of willingness to adventure and regard for the limitations of circumstance.

One need not be a historian to recognize that medical education has had its rich and its stark periods. It appears to have been most robust when reacting sensitively and appropriately to three conditions: (1) the general level of contemporary science and scholarship; (2) the current conceptions of disease and medical practice routines; (3) the social, economic and political climate of the times. Major change may occur in any one of these three. If medical education pays excessive attention to such change, or if it is blind or tardy in reacting to it, then it loses in quality or efficacy. For example, the effort to teach an undue proportion of the enormous mass of new knowledge in the medical sciences has con-

tributed to the badly crowded curriculum of most medical schools. This has been accentuated by lack of clarity about the aim of undergraduate studies. Some courses are taught as though students would have no further training before entering practice; whereas today hardly anyone believes that a bare M.D. degree is sufficient preparation for the practice of medicine and surgery. Again, preoccupation during the past half century with the tissue changes and the physico-chemical phenomena of disease led to an overlooking of techniques and attitudes essential to the art of healing. Appropriate attention to psycho-social factors in the study of medicine is returning, partly because of the demand by the patient and his family for a more comprehensive approach, and partly because of the impact of the social sciences on medicine, as also on such diverse fields as industry, general education and military training. If medical education is to be effective in today's world, it must cope with such facts as the virtual disappearance in some teaching hospitals of public ward beds due to greater prosperity and the spread of prepayment plans for hospital and medical care. Another problem is the rising cost of professional education to the student which unless relieved will lead in North America to a selection of our doctors from a more and more limited background.

We also see certain changes in the pattern of practice due to rural road improvement, union hospital organization, various forms of group practice and regionally developing diagnostic and consultant services — all making for further division of labour and centralization of medical care. These changes may be advantageous technically, economically and in promoting teamwork among all health personnel. Nevertheless, they represent a tendency to the large-scale purveying of medical care with risk of a less personal relationship between patient and doctor. To safeguard the quality of this relationship while going along with the organizational evolution of practice must be a major duty of medical schools. Finally, on the part of both universities and governments there is increasing concern for the standard of professional services rendered to the community. Interest in the university graduate should not end as he departs with his diploma, particularly if he has been educated and trained for public service in tax-supported institutions.

*Dean of College of Medicine, University of Saskatchewan.
†In 1951-52, supported by grants to the University of Saskatchewan from the Rockefeller Foundation and the Commonwealth Fund of New York, the author visited selected universities and hospitals in Canada, U.S.A., Great Britain and Scandinavia.

OBJECTIVES OF MEDICAL EDUCATION

Taking all these factors into account many medical schools would formulate their objectives along four lines: one, the training of doctors, nurses and other health personnel at the undergraduate level; two, the provision of suitable continuation studies for all members of the health team; three, the evaluation of community health needs in order to define the targets of the first two objectives, and four, scientific research. No one of these, obviously, can be the obligation solely of universities or medical schools; they call for collaboration with teaching hospitals, professional associations, government bodies, voluntary health agencies, research councils and philanthropic foundations.

A further definition of goals is possible when one considers the education of the individual student. It is manifestly impossible for one curriculum to produce ready-made general practitioners, clinical specialists and medical scientists; each requires special experience after graduation in hospital, in laboratory or in both. The undergraduate period must therefore be devoted to a basic medical education at the end of which the graduate should emerge with: (1) the mastery of certain fundamental knowledge and skills; (2) the development of a number of basic general attitudes such as intellectual curiosity and integrity, the ability to face new problems critically and without prejudice, an interest in people and sympathy with, or at least responsiveness to, those in need; (3) the capacity for continuing self-education. If he does not learn as a student to look things up in books and journals and to read for interest's sake he is unlikely to do so after graduation. In the past, the first of these has claimed major attention—the equipping of the student with requisite facts and skills, which has been the central problem of curriculum. On the other hand, the general attitudes and the urge to continue to learn on one's own must depend greatly on the quality of the student as a person and on the nature of his contact with high-minded, stimulating teachers. In fact, it has become trite to say that if good students are exposed to good teachers as they investigate nature and look after the sick, then good doctors will be forthcoming despite a mediocre curriculum! This is an exaggeration, of course, but although the selection of students and teachers will not be dealt with in this review

it is well to emphasize that, no matter how ingenious and comprehensive an educational programme may be, it can succeed only within limits imposed by the capacity and vision of both teacher and student.

DEPERSONALIZATION OF MEDICINE

New departures in medical education have arisen to cope with a wide variety of problems. Some of these concern features of medical practice noted by the public in the form of such comments as "Doctors are not as sympathetic as they used to be," "My doctor is interested in me only if something is seriously wrong," "Doctors are not really scientific in spite of studying much science," and "The doctor is not as good a citizen as he used to be." Even allowing for the fallacy of comparing an exemplary doctor of a previous generation with a less favoured specimen of our own day, there is considerable validity in the view that we are emerging from an era of preoccupation with the disease process itself, overlooking the human being that is its host and his family and society which are the environment of both. We have been most concerned with the full-blown duodenal ulcer and its complications, somewhat less with the underlying physiological derangement that produced the first symptoms and still less with the genetic susceptibility and the occupational or marital stress that evoked the reaction. The result in medical education has been a "corpse-centred" curriculum rather than one concerned with the health and happiness of living man. It has been the price paid for enormous progress in the application of the physical and biological sciences to the study of disease and the working of the body. No one would reject that accomplishment, but many are striving now to return medicine to its traditional link with the humanities and the themes of the social sciences. Some of the techniques by which the personal touch, an interest in human welfare and a sense of social responsibility are to be cultivated in the young doctor may now be set forth.

RESTORING THE PERSONAL TOUCH

To begin with, there is increasing recognition of the fact that students educate one another. There is advantage then in a class including some with substantial experience in a variety of fields—biology, history, philosophy, chemistry,

schoolteaching or travel—rather than a group of students who have all come through the same channel. The so-called premedical course is being made more elastic, permitting the student to pursue an interest in depth. Next, on entry into medicine he embarks on a study of human behaviour in both psychological and sociological sense at the same time as he begins the study of structure and body dynamics. This may take the form of lectures in psychobiology, of seminars on the development and structure of personality or of class discussions of problems in human relationships. In any case, an effort is made to demonstrate the connection between these themes and problems of daily occurrence in the practice of medicine. When a patient is used to demonstrate to students in anatomy a lesion of the brachial plexus, care is taken to greet the patient cordially and by name, to indicate interest in the effect of the accident on his job and on his family and to pay attention to his feelings under the circumstances; in other words, the teaching exercise presents a human situation as well as a neurological lesion. The same point of view, of course, should be carried into clinical teaching. A visitor in one of our large teaching centres attended ward rounds for three weeks without seeing any teacher greet a patient with "Good morning!"

ORIENTATION COURSES

An orientation course is often used to meet this need. From one to three hours a week in the first term may be taken to present a broad picture of the setting of modern medicine—its origin in folklore, in the welfare movement and in scientific discovery. Medical history as well as current newspaper clippings are used to demonstrate the influence on health of socioeconomic conditions and of disease on human history. First-year medical students are avidly interested in the moral and ethical problems of practice, often being fascinated by their relation to age-old themes in philosophy and religion. It is not too early for them to seek fundamental principles to be invoked later when dealing with fatal disease or grave misfortune. These topics may be resumed each year, preferably if they arise incisively around actual clinical cases. At the University of British Columbia a survey course taking up the same themes extends through the four years, dealing successively with history of medicine, philosophy, sociology and

problems of medical practice. At the University of Colorado the orientation course occupying a full morning each week is called *Introduction to Medicine as Human Biology*. It deals with the principles of growth and development, a statistical view of human measurements (e.g. the weight of the human liver by age and sex, in health and in disease), personality development and correlation with clinical fields of medical sciences being studied. It provides points of departure for subsequent work in epidemiology, psychiatry and rehabilitation. Teachers not familiar with this approach are fearful of diverting interest from primary studies; those who have seen it in action believe that students learn best when they see reasons for mastering the subject matter.

PSYCHIATRY AND PREVENTIVE MEDICINE

The two fields showing most change in the modern curriculum are psychiatry and preventive medicine. The former used to be concerned chiefly with the recognition and disposal of psychotic patients, and its teachers often knew little of general medicine and private practice problems. Psychiatry now uses its larger place in the timetable to teach the student to observe people and understand behaviour. On general wards or in nursing homes he practises interviewing until he can do it comfortably. He learns to win rapport while taking medical and surgical histories; he learns to diagnose and manage the anxiety states, the depressions and the compulsions which are so important in practice. At joint ward rounds and in correlation clinics or panel discussions the psychiatrist joins forces with physician, surgeon and medical scientist to define etiology and therapy in cases of hypertension, ulcerative colitis, peptic ulcer, coronary heart disease or wherever psychosomatic mechanisms are involved.

The newer departments of social and preventive medicine similarly have enlarged their scope and have induced medical education to produce doctors with zeal for more than curative tasks. The prevention of illness and accident and the promotion of health represents a positive philosophy which should activate the practitioner as well as the public health administrator and sanitation officer. Formerly concerned largely with communicable disease control, this department now studies the prevention of the degenerative diseases and mental disorders. It collaborates

with the clinical departments in mustering the prevention data that make up the health education activities of the practising doctor and of the public health nurse. Social medicine includes not only a consideration of the health resources of the community but a study of the mass phenomena of health and disease in a population. Thus, there is the epidemiology of cancer, of heart disease and of tractor accidents—a consideration of all the factors that determine the distribution of these blights in a large number of people. This kind of study yields basic information for the clinician who seeks knowledge of the natural history of disease and for the research worker in medical care. These are all investigative projects in which students can join most profitably. No two medical schools present social and preventive medicine in quite the same way, but there is no doubt that it is a most important instrument in broadening the outlook of medicine and inducing in it a sensitivity to the duties of citizenship.

REHABILITATION

Hand-in-glove with psychiatry and social and preventive medicine is rehabilitation medicine. Whether the latter be a separate department or not, it has a similar integrative function in education as well as in medical practice. Its concepts should be introduced to students at all levels and its principles should be exemplified in all clinical departments.

INTEGRATED TEACHING

Reference was made earlier to the crowded curriculum. It has grown by accretion in many centres to the point of almost complete inelasticity. Moreover, departmental walls often became so high that communication between teachers in different disciplines almost disappeared. Before discussing remedial steps that have been taken it should be pointed out that most professors have a proprietary feeling for their corner of the timetable; it is an extension of their body image, as it were, and it is not to be tampered with lightly. Yet it is clear from time to time that more hours must be found in a week for a new subject, for elective work or for free time for the student. The medical sciences have grown so rapidly and broadly that quite obviously much of their factual material must be left out. How is one to choose what to leave in? Two criteria for selecting areas of medi-

cal science subject matter to retain would seem to be valid: (a) to keep what is educationally profitable, dynamic or intellectually stimulating, and (b) to keep what is useful at present and in the foreseeable future. A dynamic item in pharmacology, for example, is the principle of competitive antagonism by drugs of similar chemical structure for specific cell receptors, or the Krebs citric acid cycle in biochemistry. In physiology, the Fick formula for estimating blood flow in an organ is a stimulating concept and may be said to be useful for medical students to know, since vascular catheterization is becoming so widespread. But surely much of the detail that has been taught in these subjects is neither stimulating intellectually nor practically useful. Who should do the shearing? The teacher may or may not himself be able to cast off lecture hours or laboratory periods. It is better for it to be done by a committee on which he or a departmental colleague sits. The professor of physiology may work out, for example, the teaching of the physiology of the circulation in the light of advice from representatives of medicine, surgery, anaesthesia, pathology and pharmacology. The same committee might well determine the approach to cardiovascular teaching in clinical departments.

Precious class time for students, but not preparation time for teachers, is saved also by the integration of effort in two or more departments when their subject matter overlaps. Biochemistry, physiology and pharmacology lend themselves to collaborative teaching; pharmacology and anaesthesia have many interests in common, also histology and pathology. Gross anatomy is enriched when the radiologist assists in teaching by film and fluoroscope, and when the surgeon or clinically oriented anatomist teaches first-aid and clinical examination of the joints in the anatomy laboratory in relation to dissection. Integrative teaching tends to define the goals more clearly for teacher and student alike. The latter feels that his medical science study is real preparation for clinical work and that even his examinations reflect this. First-year medical students were confronted with an open-book examination at end of term this year requiring the working out of problems dealing with the statistical significance of a red cell count, the extracellular fluid volume from data with radioactive chloride, the calculation of a basal metabolic rate, design of an experiment to test

anæsthetics in labour, explanation of a pneumogram and ion distribution in muscle. The movement to bring the scientifically aware clinician into medical science teaching and the scientist into clinical teaching would seem to be here to stay.

In the clinical years the trend is to complete all didactic work for the full class at the end of third year. This leaves the fourth year entirely free for clinical clerkships. In the third year some schools have dispensed with separate lecture series in such subjects as medicine, surgery, and radiology. At the University of Colorado these departments collaborate to present a single lecture course, *Survey of Human Disease*, taking up the various body systems in sequence. The same arrangement is currently under trial in the six-weeks' spring term of second year at Saskatchewan. Morning lectures presented by physicians, surgeons and pædiatricians, followed by ward work and afternoon lectures and laboratory exercises in pathology and parasitology, all deal with the general themes of inflammation and infection. There is detailed consideration of streptococcal infection and rheumatic fever, syphilis and tuberculosis. Each section opens with epidemiology, passes on to pathogenesis and morbid anatomy, then clinical features, diagnosis, treatment and finally public health control and prevention. In the first five weeks of third year there will be similar handling of cardiovascular disease, and so on.

PERSONAL RELATIONS IN TEACHING

Interesting though integration and correlation manoeuvres may be to a curriculum committee, it would be folly to make them ends in themselves. They are designed for only one purpose—to enhance an integrative activity in the mind of the student. Other measures are equally or even more important. Developing the mind is not quite as simple as developing a muscle. Participation by the student in responsibility for his own training and his identification of himself with the teacher group and the institutions in which he works must be vital forces. They are vitiated by resentment, defensive attitudes and insecurity, states which tend to be shared by contagion between teacher and student. They are the factors too which most often inhibit faculty collaboration. Fortunately there are several current developments that will dissipate

tension and insecurity in pupil and teacher alike. The most important is the team spirit that develops in the apprentice relationship. This is evident in the science departments when the teacher shares with his students his enthusiasm over his research. It is present too when teacher and student work together on a tough clinical problem; something develops in that relationship which seldom appears when the student is doing an exercise "just for marks." This elevation of morale is one of several benefits accruing from a close relationship between medical education and the practice of medicine, between the full-time teacher and his student and the family doctor. It was in danger of being greatly limited as medical schools became farther removed from normal medical care and as teachers were drawn almost exclusively from specialist ranks. The correctives take many forms—rural preceptorships for final-year students, general practice clinics in or near the teaching hospital, and home visiting plans. The pattern must vary with the situation. All have to do with the student's participating as a member of a working team in rendering a service that is needed.

This review should not close without a reference to the notable experiment in curriculum at Western Reserve University School of Medicine in Cleveland. The student is exposed simultaneously to an integrated approach to medical science and to problems in human relationships. Probably no curriculum was ever arranged with so much premeditated planning, a fact which in itself makes for success. This is how a preceptor to a freshman group returning two years later compares his students with those of the third year of the old curriculum, "They had a much more mature and relaxed attitude to the problem of becoming doctors. . . . They had very much more spontaneous interest in all aspects of medicine . . . and had a warm interest in patients as people." One has a feeling that in Cleveland significant history is being made.

In conclusion, it should be emphasized that the central problem is not one of finding a formula or a trick curriculum: It is essentially the task of achieving philosophical harmony and a *modus vivendi* among teachers, students and those who need their help.

A UNIVERSITY-CENTRED POSTGRADUATE TRAINING NETWORK

D. EWEN CAMERON, M.D.,* *Montreal*

POSTGRADUATE TRAINING is a prime objective for a steadily increasing number of medical graduates. Many things have conspired to increase the importance of postgraduate training for the physician. Let me immediately say that by postgraduate training is intended essentially the preparation which the medical graduate seeks to fit him for his chosen field of specialized work, and only to a limited degree the refresher training offered to the already established specialist.

Towering first among the forces that have brought about the present rapid development of postgraduate training is, of course, the immense expansion in medical knowledge—an expansion which to be understood in all its impacts must be seen not only in terms of the vast array of facts now available and ready for action, but also in terms of the speed with which new knowledge is constantly being brought into circulation. Among other powerful forces is the growing stature of the specialist in the eyes of the public. Indeed, while the general practitioner is still the image of medical service for many of the general public, for a growing number and particularly for the upper socio-economic classes his place is being taken by a small galaxy of specialists—"my gynæcologist"—"my ophthalmologist"—"my pædiatrician." The position of primacy accorded the specialist whether in the great metropolitan medical centres or in the small rural hospitals, the splendid and costly installations which are now provided for him, betoken the status given by his colleagues themselves to the man who has undertaken extra and extended preparation in his field. A third force is certification with its specific requirements that training should be carried out in some centre well organized for the purpose. Moreover, with each succeeding decade certification exerts not one but a double impact. On the one hand the requirements for study are steadily becoming more rigorous and the circumstances under which it can be carried out more precisely defined. On the other hand, the demand grows yearly that certification or other evidence of advanced preparation must be obtained before

promotion, or in some circumstances even preliminary appointment, can be granted.

At an earlier stage in the development of medicine what training was required of the specialist rested heavily upon practical experience gained under the direction and guidance of a chief already skilled in the field. Now the immense expansion of knowledge is demanding that more and more time should be spent in study in addition to practice. The apprentice must give way to the student-apprentice with some danger that he may become the apprentice student—as feared by all the natural descendants of Osler, the great proponent of bedside teaching.

This is the first hint of the coming dominance of the university in the postgraduate training school. But we have already passed, insensibly, from hints to facts with our recognition that it is no longer sufficient that a specialist in training should draw his information exclusively from his own field. For some time past, it has been required of him that he should have at least a working knowledge of a considerable number of related disciplines. If, for instance, he prepares himself as a specialist in internal medicine, he must be reasonably acquainted with biochemistry, physiology and endocrinology, and it would be most wise, although this is by no means fully recognized, that he should know something of human behaviour and should derive that knowledge from the psychiatrist and the psychologist and, where the community is concerned, from the sociologist and social worker.

It may be said quite categorically that this great array of ancillary information is not available in any hospital unless it be a teaching hospital of the university, and, even then, the specialized teachers and instructors whom he will require are to be found not in the hospital itself, but in the departments of the university of which the hospital is an accepted teaching centre.

Lastly, we may say that this movement towards a broad-based preparation of the specialist is likely to be given still more powerful impetus once the ongoing reorganization of the undergraduate field spreads to the postgraduate curriculum. For that reorganization is centred around the idea that men should no longer be trained only to identify and cure disease but rather to secure and enhance the health of men and women.

*Chairman, Department of Psychiatry, McGill University.

STUDENT OR APPRENTICE

The dilemma as to whether the man should prepare himself as a student or as an apprentice goes back to the conflicting views of Welch and Osler during the formative period of twentieth-century medicine. To present eyes their separate views are partial—natural complements, unnaturally separated. There is every evidence that our own period will create a fruitful synthesis.

Learning by experience is an essential part of the preparation of the specialist. It is thus that the man acquires skill in application of the knowledge which he has gained. It is in his daily experience under the guidance of outstanding teachers and clinicians that he may hope to acquire that most valuable of attributes, namely, clinical judgment, without which the greatest knowledge becomes a potentially dangerous skill.

Apart from judgment and skill, there are other attributes essential for outstanding proficiency. Among these are personality characteristics such as conscientiousness—that urge to review and review yet again the clinical findings, to check the sources of information, to ensure, despite all pressure, all fatigue, that every necessary enquiry and examination has been made, that all proper safeguards have been taken. He learns precision, and that immense industriousness which is essential for the successful pursuit and conquest of illness. He learns, too, something which we are now beginning to understand as never before, the potency and therapeutic powers which reside in the patient-physician relationship.

Stodious, measured ways of thought, patiently gained skill, conduct responsible, zealous and perceptive beyond the usual call of daily life—all can and must be wedded to one harmonious whole. It is our contention that this can be done most adequately where the university and the clinical teaching centres are linked into one training network.

BUILDING OF A UNIVERSITY-CENTRED NETWORK

The building of a university-centred network requires certain conditions. First, a sufficient number of the clinical centres in the immediate area should be of such a calibre as to be recognized by the university as teaching facilities. Second, they should be sufficiently diverse in nature to afford the postgraduate student a full range of instruction in his particular field. Where this is not possible, it can, though less conveni-

ently, be replaced by a period of training in other centres. Third, there should be an adequate number of good teachers, and this number must be sufficiently large to afford close supervision and direction to each man in the postgraduate course; moreover, it is most desirable that these teachers should meet periodically to discuss both methods and subject matter. It is true that some diversity of viewpoint is welcomed by the postgraduate student, while at the undergraduate level diversity is apt to be extremely confusing. Nonetheless, general agreement must be obtained among the teachers as to objectives and areas to be covered, and there should be at least a working knowledge of the degree of diversity of viewpoints they express.

The training network should be integrated by a central planning committee set up within the university department. This committee may be composed of the most senior teacher in each of the hospital departments within the network. Widely established custom ordinarily ensures that the teacher most senior in rank in any university teaching hospital is also the clinical head of that department. Hence, the planning committee which is placed under the chairmanship of the university department is composed of individuals who are both representative of all the senior teachers and are at the same time the most senior clinicians of the teaching centres. It is ordinarily required that all the clinicians holding appointments in the departments of a hospital used for postgraduate teaching should also hold university teaching appointments. The reason for this provision is that training in a clinical centre requires such intimate working relations between the postgraduates and all the attending clinical staff that it is essential that all of the latter should be of sufficient calibre to hold university teaching appointments.

THE OPERATION OF A UNIVERSITY-CENTRED NETWORK

In the training network of the Department of Psychiatry of McGill University, which is being used here for illustrative purposes, the student first applies for admission to training to the central planning committee which has already been described. The planning committee advises the chairman of the department and he in turn advises the University whether the candidate has met the requirements of the University with respect to graduation from a grade "A" medical

school and the serving of a general internship. The planning committee also seeks to determine, by interviews and correspondence, whether he has the desired personality characteristics. On the basis of their various enquiries a recommendation is made as to the suitability of the candidate. Once selected, the committee then goes on to decide whether the applicant should be given credit for work already carried out in his specialty in other centres, and whether he will require supplementary financing. Finally, a decision is made as to which clinical centre within the network he is to be assigned during his first year; and possibly at the same time a tentative outline of the first two years of his training may be drawn up by the planning committee.

The candidate is then advised to apply to the superintendent of the hospital or other clinical facility to which he is assigned for a position on the resident staff. In each instance, the senior teacher is also the head of his clinical department and hence has accepted the student in his role as a member of the planning committee. At the same time, he is referred to the University, where he is registered as a postgraduate student and enrolled in the course which lasts for four years and leads to a diploma.

The planning committee controls the operation of the postgraduate training programme under the direction of the head of the department, who is also the chairman of the planning committee. New courses are discussed at the planning committee meetings and set up in trial form, and new teachers are recruited. The planning committee also assesses at regular intervals the progress of the student and ultimately decides whether he should be recommended as having satisfactorily completed his course.

Hence, the senior staff men on the planning committee are continually taking two roles—that of teacher and that of clinician. This continuous merging and inter-meshing constitutes one of the two major areas at which synthesis of the concepts of a man in training as a student and as an apprentice takes place. The other major area is, of course, in the postgraduate's day-to-day work itself, where he must act at one and the same time as a student—in terms of his seminars, his lectures, his tutorials, and his reading; and as an apprentice—on ward rounds with his chief, in the examination of his patients, and in his carrying out of therapy under direction.

This synthesis of the university and the hos-

pital is sufficiently flexible to make it possible in a four years' course of postgraduate training to devote the first two years to giving a general basic preparation. At this point, we must give recognition to a fact, welcome or not, that already within the great specialized fields, whether of internal medicine or gynaecology or psychiatry, areas calling for particular skill are already appearing—in a word, that subspecialties are discernible within the major specialties themselves. To meet this, the training in the university-centred network is devoted, during the first two years, to giving a basic and general preparation to all those seeking to equip themselves for a given specialized field. In the last two years the network can provide the particular training required for that area of the specialty to which the candidate means to devote his career. Hence, during these last two years, depending on the student's choice, special emphasis will be placed on the development of his research interests, his therapeutic capacities, upon whether he wishes to work primarily in the hospitals or in the community and government service or as a university man.

TRAINING INSTRUMENTS

The great shift in emphasis from the apprentice to the student-apprentice already described has brought with it the necessity for setting up an array of training instruments, some of them new, others in new arrangement. The residency programme, which is still largely employed as the basis of training, was first set up in Johns Hopkins Hospital in 1899, and was characterized by closely supervised experience with training in the basic sciences as well as in the practical techniques of the chosen specialty. Training was essentially patient-centred, now insensibly it is becoming person-centred—and the person has a family, a job, and a community. The old-time patient who was a case has now become a man with hopes and fears, who has motivation for recovery, incentives to stay sick. As we pass into this new dimension of health and illness, it becomes steadily more clear that no hospital-centred programme with all-engrossing preoccupation with the intense struggles for life and death within its acute hospital beds can provide the full training required for the modern specialized physician; for this is only a segment, brilliantly lighted, movingly dramatic, but nonetheless a segment of the immense spectrum

which runs from illness through health to the enhancement of health and for all of which the modern man of medicine must take responsibility.

Turning for the moment to the residency programme as a basic training instrument, let us point out its great values in acquiring those attributes of judgment and precision and responsibility which we have already outlined. The progressively more vital decisions and duties placed in the hands of young men in training by the various levels of authority afforded by junior, senior and full residency are well calculated to bring into existence these qualities. Their emergence is the more certainly fostered by the close working relationship with the various members of the attending department, the sub-chiefs and the chiefs, men chosen not only for skill but for their possession of these very attributes we wish to inculcate.

The seminar as a means of instruction has been in increasing use for the last two or three decades. Under this single term one finds quite different kinds of teaching instruments in use. In the hands of one instructor, the seminar may be little more than a didactic lecture given to a small audience. At the other end of the spectrum, one may find the seminar run in an entirely non-directive manner—here, the main burden of communication is carried by the student participants, while the instructor becomes essentially a resource person. This latter conception has come into being as we have begun to understand and apply the laws of learning to medical teaching. Briefly it may be said that in a highly non-directive seminar full expression is given to the conception that there is no learning without participation, and to the belief, perhaps carried a little far, that more learning occurs at the point of the asking of a question than at the point of transmission of information. Between these two types of seminar, there lie many other forms having varying uses and gaining increasing employment in postgraduate training. There is, for instance, the panel type of seminar, where the student has an opportunity to participate in discussions during which a given subject, such as duodenal ulcer, may be discussed by a surgeon and internist and a psychiatrist. There are combined seminars; for instance, postgraduate students in internal medicine and in psychiatry may participate in joint meetings, and the instructor will deal with his subject matter from the point of view of comprehensive medicine.

Or a seminar may be one in which instruction is given not by an individual specialist or by a panel of medical men, but by a team—a pædiatrist, a social worker, and a clinical psychologist.

Passing from the seminars, let us look at a new teaching instrument, or for some a modernization of something already old in the opening days of medicine. This is the tutorial. Here the postgraduate student is assigned to a senior staff member and regular appointments are made for him several times a week. Ordinarily, a senior tutor can carry two to three postgraduate students with whom he meets, preferably individually, twice a week for a half to one hour. During these meetings, the student brings problems in the management of his cases or in the understanding of theory or in technical procedure. Alternatively, the tutor may assign the student a task to complete for the next period, which will involve specialized reading or thinking through. This teaching instrument, first set up by us as a means of offsetting the increasing anxiety shown in recent years by younger men over the assuming of increasing clinical responsibilities, has developed into a most useful method of instruction. Clearly, it has a relationship with the tutorial systems, as originally set up in Oxford and Cambridge, and, though less clearly, it has a connection with the old apprenticeship relationship which existed during the last century prior to the setting up of organized medical centres.

Still another new teaching instrument has been created by the imperatives of modern medicine. This is one which seems likely to have a considerable future. It is the teaching instrument represented by the diagnostic therapeutic team. It is this group which is primarily active and takes major responsibilities in identifying the patient's problems, setting up a working diagnosis, and planning treatment. Its primary place of operation is the ward round; it also operates in the diagnostic conference which is now frequently used explicitly as a teaching seminar. It is more influential in teaching than is probably recognized since on ward rounds and in the diagnostic conference the postgraduate student is most commonly present. The team is variously constituted, depending upon the particular area under concern. In the case of the internist and the surgeon it will certainly include the radiologist and the laboratory man, and perhaps a social worker. In the case of the

pædiatrician, it will also include a social worker and perhaps a representative from the clinical laboratory; in all teams the nurse is a prominent member. In the case of the psychiatrist, to the nurse must be added the clinical psychologist and the social worker. The best diagnostic and therapeutic work of these teams is undoubtedly done when the various members are acting together with or without the immediate presence of the patient, but in the presence of each other. In the communication which goes forward under these circumstances a number of important events take place, among them being a continuous modification of the concepts used by each within his own field, a continual reinforcement of each other's observations and a continual enhancement of the range of observations made about the patient's problems.

With our growing concern over comprehensive and social medicine, there seems no doubt that the man who undergoes training in medicine, whether undergraduate or postgraduate, must be a person who, at the end of this period of training, will be accustomed to working, as he will do in the community, in terms of a team.

Still another training instrument which, while long in use, has begun to undergo modification and change in the light of our developing conceptions of medicine, is the research project or, in some cases, the research year. It is widely held to be useful, particularly for those who will later move into the investigative field, that an opportunity should be given after the first year or two of basic preparation to undertake a research project or to spend a research year. Many of the projects are still chosen from the traditional fields of physiology and pathology, biochemistry and endocrinology, and as such are investigated in the regular research laboratories. But a growing number are starting to pay increasing attention to the importance of field studies. It is here that the impact of our evolving conceptions of medicine is beginning to make itself felt. This is, of course, a particularly difficult area of study for the young man since many of the basic premises of science which he has assimilated during his premedical and preclinical years are not adapted to carrying on research on social functioning and structure and its impact on health. Hence, if he is to work in this field he should be assigned to an experienced and older investigator.

We have not yet seen in postgraduate training

what is now beginning to appear in the undergraduate curriculum, namely, the actual assignment of the student to a family, the increasing use of community centres, of travelling clinics and of guidance centres as areas in which postgraduate training can be carried forward. Undoubtedly, as our conceptions of the part to be played by the physician in the enhancement of health and the prevention of illness are developed, this important area of field training and research will become progressively structured, and field and community work generally will become an increasingly important area for training; at the same time those departments of the university responsible for study and teaching with respect to social functioning and structure—namely, social psychology, sociology, and anthropology—will assume larger importance as partners in our postgraduate teaching programmes.

For many years we have steadily grown accustomed to the fact that the undergraduate medical curriculum must be changed, and indeed through local action by particular universities, and through general surveys by national and trans-national organizations, we have explicitly acknowledged that we have set our hands to this great work.

Far less clearly have we seen that no less certainly must our basic concepts of postgraduate training be changed, for many of the self-same forces meet on the two curricula.

The enterprise is more difficult and a major cause is our lack of unity. Experience in carrying out postgraduate training is not concentrated in a few universities as is the case in undergraduate medical training, but is scattered through an immense number of hospitals—teaching hospitals, and private hospitals, municipal, provincial, and federal hospitals, hospitals for tuberculosis, for mental disease, infectious diseases, and endlessly across the spectrum of illness.

There lie awaiting us great tasks—the defining of general purposes, the reconciling of comprehensive knowledge with special preparation, the sustaining of independence and originality of thought despite long tutelage.

But our first and basic step must be the integration of our efforts, the pooling of our experience, the wedding of the clinical and the academic. This paper has presented a way—the university-centred training network—by means of which this is being achieved with increasing success throughout the last ten years.

THE MEDICAL SCHOOL IN A CANADIAN COMMUNITY*

J. A. MACFARLANE, M.B., *Toronto*

AS EARLY as there is any record of human scholarly effort, there seems to have been an interest in the study of medicine. In the earliest writings of Egypt, of Arabia, of Greece and Rome there are many references to it. Frequently they are associated with philosophy or religion, and indeed that is not difficult to understand. Most medical theories in those days were the result of philosophical speculation rather than of scientific investigation. Here and there down the ages schools were established, frequently as the result of the teaching of some single great scholar, who unfolded a little further the riddle of the human body and its anatomy and physiology. Sometimes the schools were associated with universities; sometimes they gained renown as independent centres of scholarship and learning.

Only towards the middle of the 18th century was the scientific method beginning to affect seriously the study and practice of medicine in the western world, and the great schools were established in Britain and on the Continent. It may be interesting to review the development of medical education in the United States, for, to a lesser degree, the same influences were at work in Canada.

With the rapid development of the United States, and the increasing knowledge of medicine, medical education for a time became a field—and a very profitable one—for private enterprise. No laws governed the entrance qualifications to these schools. A degree from a proprietary school admitted the successful candidate to unrestricted practice. Between 1809 and 1909, 457 medical schools were established in the United States and Canada: 155 were still in operation in 1909. The majority of these had no relation to a university. They advertised for students; there were few admission requirements; instruction was a series of didactic lectures; the course lasted one or two years. The fees covered all the expenses and usually the schools were able to declare a profit. As soon as they failed to do so, they closed their doors

and their sponsors departed for greener fields in the newer western towns. The movement was largely American in origin, and the corrective effects of the better American students who had studied in Britain, Holland and France became gradually apparent.

In 1907 when Abraham Flexner of the Johns Hopkins School undertook, with the sponsorship of the Carnegie Foundation, a survey of medical education in the United States and Canada, the corrective measures were already in operation, but the report clarified the situation with clear-cut recommendations: the return to the basic sciences as the only foundation on which to build an education in medicine; the maintenance of reasonable standards of entrance; the association with universities, and the recognition by the university that the establishment of a faculty of medicine carries with it the responsibility of financial support far beyond the amount which is represented by the fees collected from the students; and finally, the association of medical schools with hospitals under the educational control of the school.

What changes have been wrought in less than half a century! The Flexner report was written in 1909. It altered the whole approach to medical education in the United States. The system which we had developed in Canada had always derived much more of its tradition from Great Britain and France, but undoubtedly was, and continues to be, influenced by the recommendations of this report.

Each of the twelve medical schools in Canada is an integral part of a university, and the degree conferred on successful candidates is the degree of that university. Each school has an arrangement or agreement with one or more hospitals, whereby it can carry on clinical teaching in the wards, laboratories and out-patient departments of such hospitals. The admission requirements vary slightly, but curriculum requirements throughout the course are such that candidates from each of the twelve colleges are eligible to try the examinations of the Medical Council of Canada, which gives the successful examinee the right to register and practise in any province in Canada.

What then are the objectives of a medical school? Certainly one of the first is the basic training of young men and women in the profession and art of medicine. After two to four years of preparation in college work, the average

*An address before the Empire Club, Toronto, January 13, 1955.

student begins his professional programme at about 21 years of age. In the succeeding four years, beginning with the basic studies of anatomy, physiology and biochemistry, he progresses by well-planned stages towards the final year, when all his instruction is given in the wards and lecture theatres of the hospitals. It is not difficult to understand that those responsible for planning this basic course of undergraduate training must continually revise the curriculum in the light of new researches in human physiology, chemistry and pathology, and the tremendous advances in the understanding and treatment of disease which have resulted from such investigations, particularly in the past 40 years.

What is the place of a Canadian medical school in the national life of Canada? To answer this question it might be profitable to examine our own school in Toronto, for although it may differ from others in certain details of organization and practice, it will serve as a reasonable example when considering aims and objectives.

This school is one of the largest on the continent. Each year approximately 150 young men and women complete their undergraduate course. Until the opening of new faculties in the west and at Ottawa, the Toronto school produced approximately 25% of the new Canadian graduates. Even now the annual output is about 17% of the newly qualified doctors in the nation. There are at present nearly 6,000 living graduates, and in the last ten years we have qualified some 1,500 doctors. However, this task is but a part of the three-fold responsibility of a modern medical school in the western world. As well as a source of sound and progressive undergraduate teaching, it must be the spearhead of research, and it should also be a centre for postgraduate education of specialists in various fields, as well as a community centre of continuing education of the practising physicians in the area which it serves. Its realm of influence in this last function will, of course, vary with the nature of its scholarship and research, and the degree to which it wishes to assume such a responsibility.

Medical schools are being perpetually confronted with new and difficult questions which challenge the enquiring mind. They are not only the repositories of the knowledge accumulated through centuries of effort, but the principal sources of new medical knowledge. Research is

no longer a superimposed function, but has become an integral part of the school's daily life. Investigation, enquiry, the search for truth—these are of necessity the very essence of sound teaching. A review of the annual report from the school, and the list of publications, will show the diversity and the scope of research which is carried on in the eighteen teaching departments, and in the special department of medical research under the direction of Professor Best, whose work on insulin with Banting, McLeod and Collip gave such a tremendous impetus to the investigational aspect of medicine in this centre.

The increased demand for special postgraduate training, both in the basic sciences and in the clinical fields, is a reflection of the tremendous increase in medical knowledge and the diversity of techniques, and the recognition of the fact that only by long years of application can one perfect his knowledge and skill in certain special fields. In a measure it reflects also the maturing of Canada as a nation. When I finished my undergraduate course a little more than 30 years ago, 40% of a large class left immediately for the United States for the reason that there were insufficient hospital internships in this country, and few opportunities for intensive postgraduate training. At the present time there are still those who seek their hospital training in the United States from choice, but there are more than enough internships in Canada to provide training for our newly qualified doctors.

In our own school and its associated hospitals at the present time, there are in training for the various specialties, in programmes which take from three to five years, some 250 doctors. Some will take higher degrees in the School of Graduate Studies in the University; others will qualify for specialist diplomas of our own school; others will enter the teaching or research field here or elsewhere; and a large number will take the examinations of the Royal College of Physicians and Surgeons of Canada.

The school provides annually several short courses for practitioners as well as the specialist training programme. These vary in length from three days to six weeks. It carries on a programme of decentralized postgraduate education in six other towns or cities in the province, by sending out teachers who spend a day with the doctors at the community hospitals, leading dis-

cussion groups on problems presented by the local doctors themselves.

The physician who commits himself to the discipline of a teacher and investigator in a modern school assumes a variety of tasks. As he grows older, he must take his place in the learned and professional societies, both national and international, which have as their objective the furthering of knowledge in his particular specialty. If he is in the clinical field, he will be interested in the welfare and expansion programmes of the hospitals with which he is associated. He will inevitably be sought as adviser or committee worker on the various community, provincial and national organizations, that are an essential feature of the present-day social fabric of our nation.

I would like to say a word about the financing of such a complex structure as the modern medical school. I referred earlier in my remarks to the close association of medical schools with universities. Indeed, since the publication of the Flexner report, no medical school in Canada has tried to exist except as an integral part of a university. The finances for the everyday necessities of a school—as indeed for all the divisions of a university—come from three sources: the fees paid by the students; private endowments; and government grants. The fees, high as they are in most medical schools, meet but from one-fifth to one-third of the annual budget. Income from private endowment in our own school provides approximately 5% and income from fees approximately 30%, while the remainder comes from the University, which, in turn, must look to provincial or federal sources. There is no separate grant from either provincial or federal funds towards the ordinary budget of the medical school. On the other hand, fairly liberal grants are available from various sources for the prosecution of research. These sources include the National Research Council, national and provincial cancer organizations, national life insurance funds, private foundations, provincial and federal Departments of Health, and the Defence Research Board. Bricks and mortar, alterations, replacements—these must come from private funds or special government grants. Equipment of new buildings and laboratories may be supplied through provincial and federal grants, but when the buildings are completed, the heating, the lighting, the replacement of

equipment, the staffing, all these represent increased obligations in the annual budget.

It may well be asked by businessmen why a school should sell valuable service for less than it costs to produce it. In other words, if tuition fees produce only a fraction of the cost, why not raise the fees? These indeed are already so high that schools are beginning to wonder if certain bright young students coming from the families of artisans or farmers may not be discouraged from enrolling in medicine. Annual fees in Canada vary from \$450 to \$600; in the U.S.A., from \$600 to \$900. The Americans' estimate of cost to produce a doctor is in excess of \$13,000. The cost in Canada may be somewhat less, but even the American cost is less than that of producing a jet pilot, to say nothing of the machines which the pilot needs to make his skill effective. Other American figures indicate that medical colleges in that country absorb 30% of the total budgets of the universities of which they are a part, although they enrol only 10% of the total student population. In Toronto, the medical student population is under 10% of the total enrolment, and it takes approximately 15% of the total university academic budget. In Canada at least, the salaries of teachers in medical schools are not excessive, and indeed the majority of the clinical teaching is carried on by practising specialists who devote a great deal of their time to teaching and public-ward work for a nominal honorarium.

The American medical educator is not anxious to seek either state or federal aid, fearing the possibility that state support will result in some degree of state direction. There are currently two large funds in the United States, one seeking donations from large corporations and the other from the professions, both funds being available to help meet the annual deficits of medical schools. These funds, of course, are exclusive of the many other sources for research and investigation.

My attention has been drawn recently to an advertisement in the *New Yorker* magazine. This advertisement is sponsored by a large American corporation, and states that one of every two colleges and universities in the United States is operating under a deficit. The company encourages college-trained men who work for it to contribute to their college deficit fund, and promises to match these donations, dollar for dollar, up to a thousand dollars a year.

I think I can speak for Canadian schools; they do not fear any malign influence in money which comes from provincial or federal governments; they have not been embarrassed by such support; and although they welcome private endowments and private support for special projects, the ever-widening gap between income and expenditures can only be closed by solid and continuing government funds, if the schools are to carry out the functions which the public expects and their tradition demands. The plan in Britain whereby grants are made on a five-year basis through the university grants commission has worked satisfactorily. After several years' experience under both Socialist and Conservative administration, I have heard no murmur from British educators of government interference with the sound basic principles of medical education in that country.

A medical school inevitably through its work and influence reaches out and touches the everyday lives of most of the public at one time or another. Canada has already no small reputation for the quality of medical service available to its people, both in peace and war. The advances of modern medicine, the organization of society to bring good medicine to the nation—these are topics frequently before the public in the lay press. Canadians expect the best from their doctors and from the schools which train them.

The teaching of the art and modern science of medicine to a succession of young undergraduates; the sponsorship of modern research, ever reaching out for more space, more complex and expensive equipment, more skilled technical assistance; the planning of postgraduate education and specialist training in the light of an ever-widening field of knowledge and techniques; the encouragement of a spirit of leadership in its young teachers and investigators, and finally, creating a source of advice and sound judgment in community and national affairs that touch on the health of the people—these are the principal objectives of a medical school in this twentieth century.

It is a conception somewhat different from that of a school at the beginning of the century. That it is costly in comparison with those schools in the early 1900's, when even modest student fees were sufficient to balance the budget, there is no doubt. Those who can look back over the half century and consider but a few of the everyday facts in relation to the great strides towards

prevention of disease, and the revolutionary advances in treatment, can best judge whether in this modern conception the increased costs of medical education are justified.

I have made some reference to the public interest in medical affairs. One's own interest turns quite as naturally at times to fields other than medicine—the ever-increasing expenditures on entertainment and amusement, the increased demand for motor cars and the costs of new roads to carry them, the costs of primary and secondary education, the fantastic growth of our economy, with increasing demands for scientists, trained executives and professional men, and finally, in comparison, the relatively small expenditure on higher education.

This country will need trained leaders in every field in ever-increasing numbers. The universities are the training grounds. It remains for the citizens to decide to what extent the institutions of higher learning, including the medical schools, shall continue to thrive and expand, unfettered by insecurity, and unhampered by financial stringency.

CHRONIC EFFECTS OF RADIUM SALTS

"In the United States, there are hundreds, perhaps a thousand individuals who were given radium salts parenterally or orally twenty or more years ago. For the most part, these persons are unaware that they carry radium deposits. Moreover, until recently, the medical profession has not realized that these patients exist. The long latent period between the time of administration of the radium and the appearance of symptoms has, in several instances, led to a delayed recognition of the correct etiology of the bone lesions."

"An analysis of several thousand roentgenograms done on 38 individuals who received radium therapeutically and six individuals who had been employed as 'radium' dial painters demonstrates a general correlation between the level of body burden of radium and the frequency and severity of osseous lesions."

"No patient who received radium salts exclusively by the parenteral route (and thus probably received only radium) has developed a bone neoplasm attributable to the presence of radium in the skeleton. However, significant non-neoplastic lesions are present in those individuals containing as little as 0.4 μ g. of what has been shown to be only radium salts, uncontaminated with more than 0.66 per cent mesothorium."—Looney, W. B. *et al.*: *Am. J. Roentgenol.*, 73: 1006, 1955.

CANADIAN SCHOOLS OF MEDICINE

The following general information regarding Canadian schools of medicine has been kindly supplied to us. Fuller details are available on request from each school.—EDITOR.

McGILL UNIVERSITY
Faculty of Medicine
Montreal, Quebec

G. LYMAN DUFF, M.D., Dean

McGILL UNIVERSITY, established by Royal Charter in 1821, is privately endowed and the trustees of its funds are the Board of Governors who constitute "The Royal Institution for the Advancement of Learning."

The Faculty of Medicine came into existence in 1829, when the Montreal Medical Institution, founded at the Montreal General Hospital in 1824 and the first medical school in Canada, was transferred to the University.

Candidates for admission to the Faculty of Medicine must complete a minimum of three full years of study in a recognized college or faculty of arts and science in harmony with the requirements for the degree of B.A. or B.Sc. at the college where the courses are taken. During this period of premedical study the candidate must complete full courses, with laboratory work, in general and organic chemistry, physics and zoology. If possible, the candidate should take the Medical College Admission Test conducted by the Educational Testing Service.

The course of study in medicine is of four years' duration. Each session begins early in September and continues until the middle of June, except in the final year when it is a month less in order that the degree of Doctor of Medicine, Master of Surgery (M.D., C.M.) may be awarded at the regular University Convocation at the end of May. Graduates in medicine are required to complete at least one year of internship in an approved hospital before they become eligible for a licence to practise medicine. The annual tuition fee in medicine is \$575.

The clinical facilities of a number of Montreal hospitals are available to the Faculty of Medicine. The Montreal General, Royal Victoria, and Montreal Children's Hospitals are the three general teaching hospitals. The Montreal Neurological Institute, Royal Victoria Montreal Ma-

ternity Hospital, Royal Edward Laurentian Hospital, Verdun Protestant Hospital, and the Alexandra Hospital for Infectious Diseases provide clinical teaching in special fields. The University is most fortunate in having such a large amount of excellent clinical material made available for teaching of its students by these institutions. An opportunity for living-in by students in the senior year is provided by the general teaching hospitals when the student is in the medicine and obstetrical rotations.

The needs of the medical student and graduate are well served by the Medical Library, which contains more than 74,000 bound volumes and extensive collections of other items. The chief value of the library is in its periodical collection, and relatively little is lacking in the way of important journal literature in all languages. The ophthalmological section is particularly outstanding.

A unique possession of McGill University is the Osler Library. This special library of the history of medicine and science was bequeathed by Sir William Osler to his alma mater, and its collection of nearly 10,000 volumes is outstanding in this field.

Financial assistance for worthy and needy students is available in limited amount (a maximum of \$500 yearly) through scholarships such as the Keith Hutchison and C. B. Keenan Memorial Scholarships and other smaller scholarships and bursaries established for this purpose. Limited assistance in the form of loans, repayable after graduation, is available to needy students with satisfactory academic standing, but not of scholarship calibre. Such awards cannot normally be considered until a student has established his competency by completion of at least one year of medical study.

UNIVERSITY OF TORONTO
Faculty of Medicine
Toronto, Ontario

J. A. MacFARLANE, M.B., Dean

THE MEDICAL SCHOOL of the University of Toronto is a faculty of that University, and as such receives support from the Government of Ontario.

It also receives funds from the fees paid by students, and from private endowments.

Candidates for admission to the first pre-medical year must have passed the Grade XIII examinations of the Department of Education of Ontario (or their equivalent) in the following subjects: English (2 papers), chemistry, physics, mathematics (2 of algebra, trigonometry, geometry), a foreign language (2 papers), and one other subject which may be chosen from mathematics, history, botany and zoology, or another foreign language.

In the two premedical years the student studies physics, chemistry, zoology, comparative anatomy, and psychology. He also takes two years of English, two years in either philosophy or history, and two years in another subject of his own choosing from a limited list including mathematics, botany, and the humanities.

The number of students admitted to the first premedical year is 125. For the most part, these students come from the Province of Ontario. The class is increased to 150 in the first medical year by the admission of students who have taken a degree in arts or science and have included in their course inorganic and organic chemistry, physics, biology, and comparative anatomy, as well as English. A limited number of applicants are admitted at this level from other universities in Ontario, from other provinces in Canada, and from the British Commonwealth.

The professional course consists of four years, the first two of which are devoted to the pre-clinical sciences, with the clinical work starting during the second year and continuing through the third and fourth years. The instruction in the final year is carried on almost entirely in the wards, laboratories and out-patient departments of the hospitals affiliated with the University. These include three general hospitals—the Toronto General, St. Michael's, and the Toronto Western; the Hospital for Sick Children; and the Toronto Psychiatric Hospital. The facilities of Sunnybrook Hospital and the Toronto Hospital for Tuberculosis are also used for postgraduate training.

The fees in the premedical years are \$339 for men and \$326 for women. In the first three medical years they are \$540 for men and \$527 for women; in the final year they are \$550 and \$537 respectively.

Limited financial aid is available to students from the University bursary fund, from Dom-

inion-Provincial bursaries provided by the government, and from the Atkinson Foundation. There are also two loan funds, one established by the W. K. Kellogg Foundation for students in the upper years, and the other made available by the Medical Alumni Association. There are some forty other scholarships and bursaries from endowed funds and bequests, which amount to approximately \$8,000. In this latter group are included seven scholarships and four bursaries provided by the Medical Alumni Association.

The average number of students graduating each year is 150. There are at present approximately 6,000 living graduates of the school.

The degree granted by the University on completion of the course is Doctor of Medicine. Before 1930 the degree given on graduation was Bachelor of Medicine. The degree of Bachelor of Science (Medicine) is conferred following a year's special work devoted to research in one of the basic science departments of the Faculty. The degree of Master of Surgery is awarded to graduates in medicine who have passed the examinations for fellowship in surgery of the Royal College of Physicians and Surgeons of Canada (or the Royal College of Surgeons of England, Edinburgh or Australia); who have completed three years' postgraduate work in surgery, and at least one year's training in the teaching hospitals of the University of Toronto. Candidates for this degree must submit a satisfactory thesis, and pass an oral examination on this thesis.

The postgraduate programme of the school includes diploma courses in Public Health, Industrial Hygiene, Psychiatry, and Medical Radiology, as well as organized graduate courses in Anaesthesia, Medicine, Obstetrics and Gynaecology, Ophthalmology, Otolaryngology, and Surgery. Short refresher courses for general practitioners are given annually, and the members of the teaching staff take part in various courses sponsored by the Medical Alumni Association and the Ontario Medical Association. An advanced graduate course in Medicine, Surgery, and Obstetrics and Gynaecology, lasting six weeks, is given each autumn. Special courses, lasting one week, are usually given each year by the Departments of Ophthalmology and Otolaryngology, either alone or in collaboration. A programme of decentralized postgraduate medical education, supported by the W. K. Kellogg Foundation, has been carried out successfully

during the past four years. Under this arrangement, senior teachers in the school go out to six different centres in the province and conduct clinics on the cases presented by the doctors in the community.

The Faculty of Medicine also administers the Division of Physical and Occupational Therapy, and approximately 275 students are enrolled in the three-year course leading to the Diploma in Physical and Occupational Therapy.

The Department of Art as Applied to Medicine is under the direction of the Faculty. It not only serves as a department of medical illustration for the school, but at the same time provides training for medical artists in a three-year course of study leading to the Diploma in Art as Applied to Medicine.

UNIVERSITÉ LAVAL DE QUÉBEC

Faculté de Médecine
Québec, P.Q.

J.-B. JOBIN, M.D., Doyen

CETTE FACULTÉ existe depuis 1852, mais comme toute institution, elle a eu des débuts modestes. Avant 1760, l'on ne trouvait au Canada que quelques médecins venus de France. Ceux-ci prirent en tutelle des clercs qui les suivaient dans leur pratique privée et avec lesquels ils avaient parfois un contrat notarié. Ces clercs s'intruisaient au contact du médecin et par des études personnelles.

Après la "Cession" de 1759, le gouverneur général du Canada fit passer un bill obligeant les clercs médecins à passer un examen devant un comité d'examineurs nommés par lui-même. Ce système prévalut jusqu'à la fondation du Collège des Médecins et Chirurgiens du Bas Canada, en 1847. Mais dès 1760, l'enseignement clinique avait commencé dans les hôpitaux de Québec, en particulier l'Hôtel-Dieu fondé par la Duchesse d'Aiguillon en 1639.

C'est en 1848 que s'ouvre à Québec la première école de médecine; elle fut remplacée quatre ans plus tard par la faculté de médecine de l'Université Laval qui venait de recevoir sa charte civile de sa Majesté la Reine Victoria, à Londres, le 8 décembre 1852.

En 1854, le faculté commence son enseignement qui comporte des leçons théoriques sur les matières fondamentales et de l'enseignement clinique dans les hôpitaux; les élèves doivent même accompagner les médecins dans leurs visites à domicile, assister aux autopsies et suivre un cours de gériatrie: "Nihil nove sub soli."

C'est à partir de cette époque que les médecins commencèrent à aller en France parfaire leur formation médicale, et depuis lors ils n'ont pas cessé de la faire.

Si les débuts de notre faculté furent lents et laborieux à cause de la nécessité de préparer un personnel enseignant, son évolution fut plus rapide par la suite.

En 1875, elle est reconnue par le Collège Royal d'Edimbourg. Les différentes cliniques d'enseignement s'organisent dans les hôpitaux et avec la construction d'une nouvelle école de médecine, en 1924, la faculté subit un nouvel essor: le curriculum des études est révisé, les différents départements d'anatomie, de biologie, d'embryologie, de bactériologie, d'anatomie pathologique, de biochimie et de physiologie s'organisent et surtout le personnel enseignant est complété: On fait même venir de France un certain nombre de professeurs qui contribuèrent à accentuer le caractère français de l'enseignement dispensé dans notre faculté. D'ailleurs ce caractère français devait être officiellement reconnu par les représentants de l'American Medical Association qui nous visitèrent en 1929 et en 1934 et nous classèrent "A."

Quand l'on construisit, en 1924, pour recevoir deux cents élèves, l'on crut à une énormité qui dépasserait toujours les besoins de la faculté; et pourtant, aujourd'hui, il y a longtemps que nous sommes à l'étroit avec le nombre toujours croissant d'élèves qu'il nous faut recevoir.

En effet, Laval et Montréal sont les deux seules facultés chargées de dispenser l'enseignement médical aux élèves d'expression française et depuis longtemps il nous faut refuser plusieurs centaines de candidats chaque année. Comme il faut desservir un territoire immense, cela crée un véritable problème pour nous qui sommes obligés de n'accepter que le nombre d'élèves à qui on peut donner une formation médicale adéquate.

C'est pourquoi l'Université Laval a décidé de construire un nouveau pavillon de la médecine qui sera terminé en septembre 1956. Ce pavillon sera cinq fois plus grand que l'école actuelle

et il fournira aux enseignants et aux chercheurs des facilités de travail qui leur permettront de se développer normalement et de répondre aux exigences de la population.

En 1955, notre faculté compte 700 étudiants, 45 professeurs titulaires, 37 professeurs agrégés et 112 assistants. Parmi ce personnel enseignant, il n'y a pas moins de 45 "Fellows" du Collège Royal Canadien ou d'un collège américain. La bibliothèque de la faculté dispose de 27,000 volumes et elle reçoit régulièrement 325 revues scientifiques.

La société médicale des hôpitaux universitaires se réunit deux fois par mois et elle publie ses communications dans le *Laval Médical*.

L'enseignement clinique se fait dans douze hôpitaux, où les élèves de troisième et de quatrième année sont tous les matins sous la direction des professeurs de clinique. La cinquième année est consacrée entièrement à un internat rotatoire, et, dans les principaux hôpitaux généraux, les internes sont sous la tutelle d'un moniteur qui consacre tout son temps à la surveillance du travail et à la direction des études personnelles des internes. On commence même alors l'étude des sciences de base.

Les études post universitaires sont dirigées et suivies très attentivement dans le but de pourvoir au recrutement des enseignants et des chercheurs, et actuellement, il y a environ trente jeunes médecins qui sont à parfaire leur entraînement à l'étranger.

Certains cours post universitaires sont organisés, en particulier en chirurgie, anesthésie, radiologie, psychiatrie, et les élèves inscrits à ces cours peuvent faire tout leur entraînement à Québec; mais nous trouvons préférable qu'ils fassent des stages à l'étranger avant de revenir compléter les équipes de cliniciens, d'enseignants et de chercheurs.

Depuis au delà de dix ans, le personnel des différents départements de la faculté a partagé son temps entre l'enseignement et les travaux de recherche qui sont indispensables au maintien d'un haut niveau de culture médicale.

Les équipes de chercheurs, encore insuffisantes, se forment cependant et leurs publications scientifiques ont déjà à maintes reprises attiré l'attention sur elles; elles seront cependant dans de bien meilleures conditions de travail lorsqu'elles seront rendues dans le nouveau pavillon de la médecine et que le nombre de professeurs à plein temps aura augmenté.

Tout dernièrement le curriculum des études a été revu et modifié de manière à se conformer aux exigences des grandes écoles de médecine de l'Amérique du Nord.

Voilà quelle est l'organisation technique de notre faculté, mais pour bien comprendre l'esprit qui l'anime et dans quel climat spirituel elle vit, il faut ne pas perdre de vue que l'Université Laval a été fondée en 1852, par le Petit Séminaire de Québec qui avait été fondé lui-même, en 1668, par Mgr François Montmorency de Laval. Or l'université n'a vécu et ne s'est développée que grâce au travail et aux subsides du Petit Séminaire: c'est à ce point vrai qu'il n'existe même pas de tenue de livre pour l'université pendant la période qui s'étend de 1852 à 1910: le Séminaire payait tout: salaires, constructions, aménagement et entretien.

Enfin on vient de faire les comptes entre le Séminaire et l'Université au 31 décembre dernier, mais de telle manière que le Petit Séminaire efface pratiquement la dette que l'université a contractée envers lui depuis un siècle.

C'est, à mon avis, un fait sans précédent dans l'histoire et qui démontre à quel point notre faculté de médecine, pour sa part, est en dette envers les prêtres du Séminaire. Et cela nous permet en même temps de comprendre comment et pourquoi l'on est en droit de dire que notre formation médicale est d'inspiration catholique. Elle l'est aussi parce que nos professeurs font serment chaque année de ne rien enseigner qui soit contraire à la doctrine catholique, et qu'ils sont en très grande majorité des catholiques pratiquants qui dispensent un enseignement conforme à leurs principes.

Notre école de médecine, quoique ouverte aux élèves de tout langue et de toute religion, est donc bien une école d'inspiration catholique. Elle est aussi une école d'expression française parce que l'enseignement s'y fait en français, parce que les élèves sont presque tous d'origine canadienne française et parce que les professeurs sont de culture française. Ils sont de culture française parce que la plupart d'entre eux ont fait leurs études post-universitaires en France renouant ainsi avec l'ancienne Mère-Patrie des liens culturels qui ont contribué au développement d'une culture intellectuelle canadienne d'expression française et qui n'entame en rien notre fidélité canadienne. Isolé au milieu d'une immense population d'expression anglaise, le petit groupe canadien français se doit de rester de plus

en plus attaché à sa culture catholique et française car il a la conviction de contribuer ainsi à l'édification d'une culture essentiellement canadienne.

Autant nous admirons le développement des institutions de nos compatriotes de langue anglaise, autant nous apprécions les marques d'intérêt que le Canada-Anglais ne cesse de porter chaque jour davantage au Canada-Français.

Pour notre part, nous, professeurs de la faculté de médecine de l'Université Laval, nous considérons ne pas faillir à notre devoir en concertant nos efforts pour maintenir et développer une culture médicale d'expression française et d'inspiration catholique.

UNIVERSITÉ DE MONTRÉAL

Faculty of Medicine

Montreal, Quebec

WILBROD BONIN, M.D., Dean

THE UNIVERSITY of Montreal Faculty of Medicine, incorporated in 1920, is a component school of the Université de Montréal, and is under the full jurisdiction of the University, a private institution. It is located in the same building as most other component schools of the University, 2900 Mount Royal Boulevard, Montreal. Legal ownership of the School is vested in the Board of Governors of the Université de Montréal. The faculty is headed by a dean, a vice-dean, a secretary, and an assistant secretary. The dean or vice-dean may be director of studies. Present officers are: Dr. Wilbrod Bonin, Dean and Director of Studies; Dr. Roméo Pepin, Vice-Dean; Dr. Joseph-Luc Riopelle, Secretary; Dr. Roger Dufresne, Assistant Secretary. Instruction in the faculty is in French.

Entrance requirements are, among others: (a) a sufficient knowledge of French; (b) a B.A. degree of the University of Montreal, or its equivalent, or the brevet of the College of Physicians and Surgeons of the Province of Quebec; (c) a preparation in premedical sciences (physics, chemistry, biology) of the same level as section B of the University of Montreal B.A. degree. Notwithstanding these entrance requirements, the Faculty reserves its right to select only the better candidates. Completed application forms

must be sent before the first of July of the year of contemplated admission.

The minimum period of professional training required by the University of Montreal as a qualification for the M.D. degree is five years, including one year of rotating internship in approved hospitals.

The medical curriculum includes instruction in laboratory courses in basic medical sciences at the University building, and clinical teaching in approved hospitals. There are four sessions of 32 weeks each, exclusive of examination periods. The sessions begin on the second Tuesday of September. Fifth-year internship begins on June 1 and ends on May 31 of the following year. A programme of graduate work leading to M.Sc. and Ph.D. degrees is also provided by the Faculty of Medicine.

Three schools administered by the Faculty of Medicine, each of them with a Director and an Education Committee, give courses in dietetics, medical technology, physiotherapy and occupational therapy: namely, the Institute of Dietetics, the School of Medical Technology, and the School of Physiotherapy and Occupational Therapy.

Fees for the medical curriculum are \$375 a year for Quebec residents. There are added charges for students' associations, etc. Fees for postgraduate courses are \$250 a year.

The following hospitals are used for clinical teaching: Hôtel-Dieu, Notre-Dame, Miséricorde, St-Jean-de-Dieu, Ste-Justine, Sacré-Cœur, St-Luc, Queen Mary Veterans' Hospital, Général de Verdun, Pasteur, Ste-Jeanne-d'Arc, St. Joseph Sanatorium, and Maisonneuve.

For medical students there are three scholarships of the University of Montreal. A considerable number of scholarships of the Quebec Ministry of Youth and Social Welfare are allocated by the Vice-Rector of the University of Montreal.

QUEEN'S UNIVERSITY

Faculty of Medicine

Kingston, Ontario

G. H. ETTINGER, M.D., Dean

QUEEN'S UNIVERSITY is an endowed institution administered by a Board of Trustees who are

elected primarily by its graduates. Its income is made up of fees from students, interest on endowments, and grants from the provincial and dominion governments. The Faculty of Medicine is administered by a faculty board, consisting of the principal, vice-principal, dean, professors, and associate and assistant professors. The faculty selects the students, conducts the teaching and examinations, and recommends to the Senate those whom it considers worthy to receive degrees in medicine. The Senate, a body consisting of the principal, vice-principal, faculty deans and elected members from each faculty, awards all university degrees, and determines all matters of an academic nature, including the approval of recommendations which come from the various faculties.

For admission to the Faculty of Medicine in 1955 the candidates must have grade XIII matriculation standing, or equivalent, in English, a second language, physics, chemistry, and two papers in mathematics, one of which should be trigonometry. Sixty-four freshmen are admitted annually.

The course in medicine lasts six years. In the first year, the classes are those sometimes described as "premedical." A student who presents evidence of credit for classes in the first year (obtained in a faculty of arts or science) may be admitted to the second year only if a vacancy occurs. The full six years are spent in undergraduate instruction. In the sixth year each student spends one-half of the teaching term in Ottawa, at the Civic Hospital, where seventy members of the attending staff offer clinical instruction. There is no "undergraduate internship year," although a limited number of students may do clinical clerking in one of the University hospitals during the final year.

The teaching hospitals in Kingston are: the General Hospital (483 beds), the Hôtel Dieu (280 beds), St. Mary's Hospital (for chronic illness—116 beds), Ongwanada Sanatorium (for tuberculosis—160 beds), the Ontario Hospital (for mental illness—1,000 beds), and the Kingston Military Hospital (125 beds). In Ottawa the Civic Hospital provides 900 beds.

Opportunities for research and graduate training are available in the basic medical and the clinical departments, and may be supplemented with teaching fellowships and clinical tutorships; the latter are offered in the Ottawa Civic Hospital as well as in Kingston. A two-year course

in medical radiology is open to graduates of any Canadian medical school, and leads to a diploma in either diagnostic D.M.R.(D) or therapeutic D.M.R.(T) radiology.

The degrees offered to undergraduates are M.D., C.M. After 1960 the M.D. alone will be awarded. Graduate degrees available are M.Sc. (Med.) and Ph.D.

The fees are: sessional fee for undergraduate, \$425; student interest fee (including health service), \$44; sessional fee for M.Sc.(Med.) and Ph.D., \$200; D.M.R. fee, \$200; degree fee, M.Sc.(Med.), \$20; degree fee, Ph.D., \$50.

Both men and women are admitted to the Faculty of Medicine. In the first year all women and a number of the men will be housed in University residences. The University maintains a housing bureau and can advise students as to suitable boarding and lodging houses. Women not in residence may obtain meals at Ban Righ Hall, and men may be served in the cafeteria at the Students' Memorial Union. The average cost of room and meals is from \$15 to \$18 a week.

Entrance and matriculation scholarships are open to candidates for admission to medicine, varying in value from \$30 to \$1,500. Details may be obtained from the University Registrar. In addition there are bursaries including Dominion-Provincial Student Aid Bursaries and the Atkinson Charitable Foundation Bursaries. Applications for bursaries from these funds should be made through the high school principal. Reuben Wells Leonard Bursaries are also available; information should be obtained from the Toronto General Trusts Corporation, Toronto.

A number of scholarships and prizes are awarded at the conclusion of each undergraduate year, some of which are more than sufficient to pay the class fees. The total sum of these exceeds \$12,000. A University loan fund offers help in meeting minor financial distress.

The session for 1955-56 commences September 12 and terminates April 28. The dean is G. H. Ettinger, M.D.; the secretary is H. D. McEwen, Ph.D.

CONTACT DERMATITIS FROM CHLORPROMAZINE

Two nurses who were frequently exposed to chlorpromazine over a period of several months developed a severe, disabling and protracted contact dermatitis from the drug.—Lewis, G. M. and Sawicky, H. H.: *J. A. M. A.*, 157: 909, 1955.

DALHOUSIE UNIVERSITY
Faculty of Medicine
Halifax, Nova Scotia

C. B. STEWART, M.D., Dean

THE FACULTY OF MEDICINE of Dalhousie University was established in 1868, fifty years after the founding of the University. Difficulties over finances and space led to its separation from the University in 1875 and the establishment of the independent Halifax School of Medicine. In 1885 this was affiliated with the University and in 1911 became once more an integral part of Dalhousie as the Faculty of Medicine.

Dalhousie University is a privately endowed institution. It receives no government grants except for the Faculties of Medicine and Dentistry, which have obtained some financial aid from the Governments of Nova Scotia and Newfoundland since 1947 and from New Brunswick and Prince Edward Island since 1949. These grants constitute less than 20% of the income of the two faculties.

Admission to medicine requires fifteen University classes or three years after junior matriculation. Seven subjects of junior matriculation are required, including two foreign languages. The fifteen premedical classes include ten required and five optional courses. The required classes are three in chemistry, two in biology, two in English and one each in physics, mathematics and history. Four of the optional subjects must be in the humanities and social sciences. In recent years approximately 80% of the students have exceeded these requirements and obtained a B.A. or B.Sc. degree.

The medical course at Dalhousie is of five years' duration. The first four years are in university and the fifth is a rotating internship in affiliated hospitals. The academic year extends from early September to mid-May in the first four years and the internship is of twelve months' duration.

Dalhousie University has retained control of the fifth-year internship in order to ensure a balanced rotation. All students have two months on a general medical service, two months on medical specialties, two months on a general surgical service, two months on surgical specialties (including one month of emergency surgery), two months on obstetrics and two months on pædiatrics. Outpatient as well as

inpatient training is included on all services. The M.D. degree is granted on completion of the rotating internship. Conjoint examinations are held at that time with the Medical Council of Canada and the Provincial Medical Board of Nova Scotia. The degree and licence to practise are therefore received in the same year. The rotating internship is also accepted by the Royal College of Physicians and Surgeons as one of the years qualifying for certification or fellowship. Dalhousie University will continue to grant the dual degree of M.D., C.M. until 1959. Following that year the degree will be M.D.

The chief teaching hospitals are the Victoria General Hospital (524 beds), Halifax Children's Hospital (204 beds), Grace Maternity Hospital (60 beds and 60 bassinets), Camp Hill Hospital (D.V.A.) (550 beds), Halifax Tuberculosis Hospital (126 beds), the Dalhousie Public Health Clinic and the Nova Scotia Hospital (450 beds). In addition the rotating internship includes the Saint John General Hospital, Saint John, N.B. (443 beds); St. John's General Hospital, St. John's, Newfoundland (456 beds); Prince Edward Island Hospital, Charlottetown, P.E.I. (110 beds); Halifax Infirmary (192 beds); Nova Scotia Sanatorium, Kentville, N.S. (400 beds); Sydney City Hospital, Sydney, N.S. (167 beds); Victoria Public Hospital, Fredericton, N.B. (131 beds); and the Moncton General Hospital, Moncton, N.B. (207 beds). The rotations centre around the Victoria General Hospital in Halifax and the Saint John General Hospital in Saint John, N.B.

The student pays tuition fees of \$350 in the first four years and \$325 in the fifth year. Other fees for registration, students' health service, library and laboratory deposits, and student council membership, total approximately \$80 per year. Five entrance scholarships of \$500 each are provided annually, two to residents of the mainland of Nova Scotia, one to a resident of Cape Breton, one to a resident of New Brunswick, and one to a resident of Newfoundland or Prince Edward Island. Several bursaries and prizes are also awarded each year and a fund is available from which small loans are made to students on application.

In selecting students for admission to the Faculty of Medicine priority is given to residents of the four Atlantic provinces, but a small number are accepted from the other provinces of Canada, the United States and the British

West Indies. The first-year class usually numbers 58, and in recent years the number of graduates has varied from 48 to 54.

A complete revision of the curriculum is being carried out at present, and several important changes will be initiated in the 1955-56 session, primarily designed to increase inter-departmental teaching and to change the emphasis on certain subjects in accord with modern trends in medical education.

In recent years one of the interesting developments at the Dalhousie Medical School and its affiliated hospitals has been the extension of postgraduate education. With the aid of a grant from the W. K. Kellogg Foundation a programme has been developed for the continuing education of physicians in the four Atlantic provinces. Visiting lecturers in various fields of medicine and surgery have been brought to Halifax and to other centres in the four Atlantic provinces, to give lectures and clinics. In most instances the lecturer has visited two centres while in the Maritimes. The second type of programme has consisted of intensive special courses of approximately five days, which have been arranged for general practitioners by the departments of Surgery, Medicine, Obstetrics and Gynaecology, Paediatrics and Anaesthesia. In addition, the departments of Ophthalmology and Otolaryngology, Urology, Preventive Medicine, and Psychiatry have made contributions to some of these programmes. The Dalhousie staff members have also carried their postgraduate activities to the smaller centres of the four Atlantic provinces. This is the largest and most important aspect of the programme. Most of the lectures or clinics are arranged through a local medical society. The programme usually consists of an evening lecture or symposium by one or more of the university staff, but in some instances discussions or clinics have continued on the following morning in the local hospital. During the past year increasing emphasis has been placed on clinical teaching rather than lectures or other formal presentations, and at the same time more active participation by the physicians in the area has been encouraged. A specialist from a department of the Faculty of Medicine is invited to one of the smaller local hospitals to discuss clinical cases with the staff members. The local practitioners work up a number of problem cases and present them to their confrères and the visiting specialist, who then leads

a discussion on the problems thus presented. During the past year another type of decentralized programme has been introduced with considerable success. A group of practitioners in a small area enrol for an organized course of lectures, clinics and demonstrations, to be held at weekly intervals. An evening programme of three hours includes presentations by two visiting Dalhousie teachers, and clinical presentations by one or more members of the study group.

UNIVERSITY OF WESTERN ONTARIO

Faculty of Medicine
London, Ontario

G. E. HOBBS, M.D., Assistant Dean

THE FACULTY OF MEDICINE, University of Western Ontario, has been in continual existence since the first classes were held in 1883. Originally operating as a joint stock company, this was discontinued and the Faculty of Medicine came under the direct control of the same Board of Governors as the rest of the University in 1912, and moved to the present medical building in 1921.

The University of Western Ontario is a private university but in receipt of government grants in common with other universities with faculties of medicine in the province.

The course leading to the degree of Doctor of Medicine requires a minimum of six years. The teaching is provided for two years in the Faculty of Arts and four years in the Faculty of Medicine. In the Faculty of Arts the first year is taken in common with all sciences. The majority of students then proceed to a second premedical year where the subjects and content have been modified to be more relevant to medicine. Arrangements are made to allow a limited number of students with other premedical backgrounds to enter the medical course.

Grade XIII standing in English, mathematics (3 papers), chemistry, physics, and one other language is required for admission to the premedical course. During the two premedical years teaching is provided at the campus of the University. In the four medical years teaching is

carried out in the Medical School building, a section of the Meek Laboratory at Victoria Hospital, and affiliated hospitals. The Medical School building is located in the vicinity of Victoria Hospital, near the centre of the city, and some distance from the main buildings of the University.

The tuition fees are \$350 for each of the two premedical years and \$550 for each of the four years in the Faculty of Medicine.

Clinical teaching is carried out in Victoria Hospital, War Memorial Children's Hospital, Westminster Hospital, St. Joseph's Hospital, Beck Memorial Sanatorium, and the Ontario Hospitals in London and St. Thomas.

A large number of scholarships and awards are available, as well as a substantial student loan fund.

Funds are available to bring outstanding lecturers to the Medical School each year in medicine, surgery, pathology, and psychiatry.

each of the first four years and \$110.50 for the fifth year. Dr. David A. Stewart Memorial Scholarships of a value from \$200 to \$450 annually are available to a limited number of students. Assistance may also be obtained from the W. K. Kellogg Student Loan Fund and from Dominion-Provincial Youth Training Scholarships. Scholarships of smaller amounts are also available.

Outstanding features of the Faculty of Medicine are: an excellent library, shortly to be housed in a new wing now under construction, and a large museum of pathology in which approximately 4,000 specimens are permanently displayed.

In order that senior students may learn at first hand something of the conditions, problems and satisfactions of rural practice, fourth-year students are encouraged to spend a period of two weeks under a selected rural preceptor. This has proved to be a valuable educational feature of the course.

UNIVERSITY OF MANITOBA

Faculty of Medicine

Winnipeg, Manitoba

LENNOX G. BELL, M.D., Dean

THE UNIVERSITY OF MANITOBA, which is a provincial institution, confers the degree of Doctor of Medicine. Seventy-two students are admitted to the Faculty of Medicine annually. For admission, following junior matriculation three premedical years in the Faculty of Arts and Science are required. The course in the Faculty of Medicine is five years, consisting of two years largely devoted to the preclinical subjects, a third year in which instruction is mainly clinical, and a fourth year in which clinical instruction is largely carried out at the bedside. The fifth year is an undergraduate internship year which must be satisfactorily completed at a hospital acceptable to the University. The chief teaching hospitals are the Winnipeg General Hospital, St. Boniface Hospital, Children's Hospital of Winnipeg, and Deer Lodge Veterans' Hospital. The main University buildings are in Fort Garry, and the buildings of the Faculty of Medicine are adjacent to the Winnipeg General Hospital. Fees in the Faculty of Medicine are \$440.50 for

UNIVERSITY OF ALBERTA

Faculty of Medicine

Edmonton, Alberta

J. S. THOMPSON, M.D., Executive Secretary

THE ADMINISTRATION of the Medical School is entirely provincial, as it is a part of the University of Alberta.

The entrance requirements are two full university years with full university courses in organic and inorganic chemistry, physics, and zoology. The course consists of four full university years of approximately 32 weeks each. The degree granted is Doctor of Medicine.

The schedule of fees is: first year, \$300; second year, \$450; third year, \$500; fourth year, \$500.

The chief teaching hospitals are the University of Alberta Hospital, the Royal Alexandra Hospital, the Edmonton General Hospital, and the Misericordia Hospital, which are all general hospitals in the City of Edmonton. Use is also made of the facilities of the Oliver Mental Hospital, the Charles Camshell Indian Hospital, and the Aberhart Tuberculosis Sanatorium, all in Edmonton.

Few major scholarships are available, apart from Dominion-Provincial Student Aid Bursaries and the W. K. Kellogg Student Loan Fund. There is also a small loan fund established by the Class of 1941. The College of Physicians and Surgeons of Alberta donates \$200 scholarships to the two top-ranking students in each of the first three years, and also provides a \$1,000 fellowship, which is awarded to a student who takes a year from his medical course to obtain further training in one of the basic sciences. There are also some City of Edmonton scholarships which may be available, and several small prizes for proficiency in various subjects.

Starting with the 1954-55 term, the students in fourth year will live in various teaching hospitals during their semester in obstetrics, but continue to attend usual lectures and clinics during this semester.

Combined clinics for third- and fourth-year students are held once a week. One major topic is discussed by several representatives of the basic science and clinical departments, each applying the knowledge of his own field to the subject under consideration.

UNIVERSITY OF SASKATCHEWAN
Faculty of Medicine
Saskatoon, Sask.

J. W. MACLEOD, M.D., Dean

THE COLLEGE OF MEDICINE had its origin in the School of Medical Sciences, formed in 1926, to provide the first two years of medical studies. The curriculum was altered in 1945 to conform to the four-year pattern adopted by most Canadian universities. With the laying of the cornerstone of the University Hospital and consolidation of plans for clinical departments, the medical school became the College of Medicine in 1952. Clinical departments were set up two years later with full-time heads in medicine, surgery, obstetrics and gynaecology, psychiatry, paediatrics, rehabilitation medicine, anaesthesia, ophthalmology, diagnostic radiology and therapeutic radiology. With assistants in several departments the number of full-time teachers in

the College of Medicine and University Hospital on July 1, 1955, was 22. Working with these will be a larger number of part-time teachers, of whom at present 59 have been named from Saskatoon and 16 from other Saskatchewan centres. Third-year instruction will be offered in 1955-56 and the first M.D. degrees will be conferred in 1957. A year of internship satisfactory to the faculty will be required before licensing.

The Medical Building opened in 1949 has four full floors and a fifth floor containing animal quarters, operating rooms and radio-isotope laboratories. Connecting with it on three floors is the University Hospital. First patients were received in January 1955, and by late fall all 550 beds will be available. Special features include psychiatric and rehabilitation wards on the fifth floor, sharing facilities in therapy; a large cafeteria dining room on the sixth floor with facilities for meal-time committee meetings; a drug-manufacturing unit run as a teaching activity by the College of Pharmacy, and laboratories for pulmonary function studies, cardiac catheterization and research in radiation physics. In the hospital are housed also the Cancer Clinic of the Provincial Department of Public Health, the Canadian Red Cross Society Blood Bank and an outpatient department occupying two floors of one wing. A gift of \$250,000 from the Saskatchewan Division of the Canadian Cancer Society forms the basis of plans being drawn for a medical research building to be completed in 1957. This will include additional animal quarters, operating rooms, an electronics workshop, facilities for isotope and radiation studies, constant-temperature rooms and a module system of laboratories suitable for biochemistry, tissue culture and other standard research techniques.

The University Hospital does not come under the University, but is administered by a board established by the University Hospital Act. By the latter's terms three representatives of the University are on the Hospital Board, two of whom must always be the President of the University and the Dean of Medicine. The identifying of medical care with educational goals is further assured by the rule whereby the professorial heads of university departments are also the chiefs of the corresponding hospital departments. In line with the goal of the College of Medicine to prepare graduates who will meet

the needs of Saskatchewan communities, special attention is being given to the training of family doctors. During the undergraduate period the student will be exposed to the best possible examples of the general practice of medicine. This will be aided by a rural preceptorship in the final year and by the close collaboration in the clinical departments of full-time teachers, part-time specialists and selected general practitioners. The latter are attached to services in the University Hospital through the Department of General Practice. A specially arranged two-year internship is urged as minimum training for those who desire to become family doctors. Clinical teaching is carried out also at the Saskatoon City Hospital, at St. Paul's Hospital, at the Saskatoon Sanatorium and at Saskatchewan Hospital at North Battleford (psychiatry).

Entrance to medicine is by the bachelor's degree in Arts or Science, or the completion of at least two years of university work after Grade XII. Apart from required work in English, a foreign language, physics, chemistry and biology, emphasis is placed on liberal studies along lines of personal interest. This may be illustrated by the following excerpt from the calendar: "Students are reminded that there is no advantage in taking medical subjects such as biochemistry, physiology or bacteriology during their premedical work. Nor will the accumulation of many credits in science subjects give one applicant advantage over another with similar accomplishment in other academic fields, such as humanities or social sciences. Since the branches of medicine are so varied there is room for a wide variety of talents and backgrounds among those admitted to its study. In any one class it is hoped that there will be some students who have gone deeply into one or more of the following fields: the physical or biological sciences or mathematics; philosophy, psychology, sociology or anthropology; history, literature or languages, either classical or modern."

Forty students are admitted, of whom about 10% may be from outside the province. The latter are selected on the basis of distinctive qualities in background or experience as well as scholarship. Beginning in 1955-56, the tuition fee for first-year medicine will be \$425 and for subsequent years \$475. Other student fees, including health service, are \$43. A limited number of students may live in university dormitories.

UNIVERSITY OF OTTAWA

Faculty of Medicine

Ottawa, Ontario

A. L. RICHARD, M.D., Dean

THE SCHOOL was organized in September 1945 as the Faculty of Medicine of the University of Ottawa, a private institution. The administration of the Faculty is conducted by an Executive Council and a Faculty, both of which are presided over by the Dean. The Dean is responsible to the Rector in administrative matters, including staff appointments, and to the Senate of the University in academic matters.

The School is co-educational. The minimum academic requirement for admission to the pre-medical year is Ontario Grade XIII honour matriculation, or equivalent certificates. Students who have obtained their bachelor's degree in arts or in science and who have completed the required courses in biology, chemistry and physics may be admitted to the first year of medicine. More than 85% of the students in the school have, before entering, degrees either in arts or in science.

The course consists of six sessions of 33 teaching weeks, comprising a premedical year, four years of medicine and one year of internship, after which the degree of Doctor of Medicine is granted. Instruction in the Faculty is bilingual.

The tuition fee for Canadian students is \$320 for the premedical year, and \$375 for each of the other years. Non-Canadian students add \$300 to the regular fees.

The chief teaching hospital is the Ottawa General Hospital, containing approximately 600 beds. Appointments to the medical staff are made by the governing body of the hospital on the recommendation of the Rector in Council. The heads of the clinical departments are also the heads of corresponding departments in the faculty. Additional clinical facilities are found in the Veterans' Pavilion at the Ottawa Civic Hospital, Saint Vincent's Hospital, the Saint Laurent Sanatorium in Hull, and the Rockcliffe Military Hospital.

Fourth-year students engage in field work two afternoons a week, which provides domiciliary clinical teaching in co-operation with the Victorian Order of Nurses and the public health nurses of the municipal department. These students are thus given the opportunity of seeing

patients in the setting of the home and family.

The registration for 1954-1955 was 284. Owing to increased facilities represented by the new medical building, a larger number of students will be accepted next year.

UNIVERSITY OF BRITISH COLUMBIA

Faculty of Medicine
Vancouver, B.C.

MYRON M. WEAVER, M.D., Dean

THE UNIVERSITY of British Columbia Faculty of Medicine was established in 1950 and its first class graduated in May 1954.

The physical plant consists of a group of basic medical sciences buildings on the main campus of the University and a number of departmental offices and laboratories in the various clinical departments of the Vancouver General Hospital. At the hospital, over 500 beds are assigned for teaching medical students. In addition, the facilities of St. Paul's Hospital, Provincial Mental Hospital (Essondale), the Children's Hospital, and the Western Society for Rehabilitation are used in clinical teaching.

Sometime during the summer construction will begin on a medical school and pathology services building at the Vancouver General Hospital. This will house the departments of medicine, pathology, and surgery, as well as providing library facilities, administrative offices and student areas. The library is a biomedical branch library of the University Library on the main campus.

The entrance requirement of the Faculty of Medicine includes three years of premedical studies in an approved Faculty of Arts and Sciences. Minimum course requirements include two years of English, one year of mathematics, three years of chemistry, one year of physics and two years of biology-zoology.

Classes for the first year in medicine are limited to 60 students. There are no restrictions as to residence. Only under exceptional circumstances is an applicant accepted who is over thirty years of age. No applicant is accepted who has been required to withdraw from another medical school. A personal interview with the Screening Committee may be requested of any

applicant, and any applicant may request an interview with a member of the Screening Committee.

The academic year begins on the first Tuesday after Labour Day. Tuition and incidental fees in each year of the medical course are \$445. No extra fees are charged non-residents.

The examinations of the Medical Council of Canada are used as the final examinations in the fourth year. All written and oral examinations are held in late April or early May. Each candidate for the degree of Doctor of Medicine is required to present a thesis acceptable to the Faculty.

Application blanks are available between October 15 and December 15. Selection of students for the fall class begins in February each year. Accepted applicants must pay a preliminary fee of \$50 to be applied in the tuition of the first year of the medical course. Correspondence should be addressed to the Faculty of Medicine, University of British Columbia.

ONTARIO HEART FOUNDATION

The Ontario Heart Foundation is to establish units for heart and cardiovascular investigation in university centres and sponsor postgraduate courses on heart disease by teams of specialists in centres throughout the province as well as in the universities. Funds are available from a grant of \$100,000 recently received from the Ontario Government.

National public health grants to aid projects sponsored by the Ontario Heart Foundation for the year 1955-56 will provide \$99,000 for the study of heart failure, the heart in anaemia, electrocardiography, arteriosclerosis, hypertension, treatment of rheumatic fever, treatment of congenital heart disease, and pharmacology of the heart and circulation at various university centres throughout Ontario. Present funds from these sources are, however, inadequate and financial support from the public is imperative.

During the year ending March 31, 1955, \$90,358 was spent on 19 research projects, carried on at Queen's University and at the Universities of Ottawa, Western Ontario and Toronto, in the Victoria Hospital in London and the Kingston, Hamilton and Toronto General Hospitals, Toronto Western Hospital, and the Hospital for Sick Children, Toronto. A combined medical-surgical cardiovascular research unit has been established at the Toronto General Hospital, financed in large part by a yearly block grant providing uninterrupted support of major research projects directed by full-time investigators. Similar block grants to other large teaching hospitals are under consideration.

Case Reports

PYOGENIC LIVER ABSCESS

R. L. AIKENS, M.D., C.M., F.R.C.P.[C.],
E. F. ROSS, M.D., C.M., F.R.C.S.[C.] and
J. A. NOBLE, M.B., Ch.B., F.R.C.S.(Edin.),
Halifax, N.S.

PYOGENIC LIVER ABSCESS is reported rather infrequently in the medical literature. Among the earlier reports are those of Norris and Farley (1926),¹ Keefer (1934),² and Ochsner *et al.* (1938).³ More recently, there appear to be few references to more than two or three cases. In 1948, Hays *et al.*⁴ recorded their findings in ten cases of liver abscess observed over a six-month period. Several of these were probably amœbic, although this was not proved. McFadzean *et al.*⁵ in 1953 reported fourteen cases of solitary pyogenic abscess of the liver seen in Hong Kong. Treatment was by closed aspiration and systemic and local injection of antibiotics. The response was uniformly good.

In reviewing the literature, two features are suggested. Firstly, there seems to be relatively less pathological (autopsy) material and relatively more clinical material described as time has passed, reflecting the lower mortality since antibiotic therapy has become available. Secondly, and for the same reason, the incidence of the disease appears to be less, since the underlying causative factors may now be treated more effectively and the condition prevented.

The infection may reach the liver in various ways: (1) via the bile ducts; (2) via the portal vein or tributaries, as in suppurative appendicitis; (3) via the hepatic artery, as in septicæmia; (4) by direct extension from nearby organs, as in empyema of the gallbladder or perforation of a peptic ulcer; (5) by direct trauma, penetrating or non-penetrating; (6) unknown. The details are described in the standard textbooks and will not be repeated here.

We wish to report two cases of liver abscess considered to be pyogenic, the first originating from the hæmorrhoidal veins as an ascending pylephlebitis and the second of unknown pathogenesis.

CASE 1

R.M., clergyman, aged 50 years. The illness began about November 1, 1953, with some perianal itching.

Since one of his children had pinworms, he thought that he might be similarly affected and treated himself with ointments and enemata. He also consulted his physician, who gave him appropriate local therapy. Hæmorrhoids were troublesome as well, and sitz baths and suppositories were used. Relief was minimal and in a few days the discomfort gave way to rather severe, sharp, tearing pains which seemed to be in the anal canal and rectum. Fever next appeared and the temperature mounted slowly but steadily for a week. He then had chills and generalized abdominal cramps. The pain then became localized to the right lower quadrant and, the temperature having reached 104° F., he was admitted to hospital. The pain had now become most prominent in the epigastrium; anorexia, belching and night sweats were also present. The pulse rate and white cell count were elevated in keeping with the fever.

These symptoms continued more or less for a fortnight. Penicillin and streptomycin controlled the fever somewhat, but it was clear that he was not progressing satisfactorily. He was transferred to the Victoria General Hospital on December 1. At this time there was tenderness in the right upper quadrant and in the epigastrium. In the region of the left lobe of the liver, just to the left of the midline, a rounded tender mass about 10 cm. in diameter was felt. With the exception of a few rales over the left lower lobe, the rest of the examination was negative.

The clinical impression was of liver abscess. The pathogenesis seemed fairly straightforward from the history: beginning with a local irritation around the anus, an infection had set in, involving the anal canal and extending up into the rectum and probably to the pararectal tissues. From the description of the chills, the abdominal pains and the final localization in the hepatic area, it seemed probable that an ascending pylephlebitis brought the infection from the hæmorrhoidal veins via the portal vein to the liver.

The laboratory gave some corroboration of this impression. The white cell count was 19,700, with 86% neutrophils. Total serum bilirubin was 1.4 mgm. %, cephalin-cholesterol flocculation 1 plus, and thymol turbidity 7.8 units. Plasma albumin level was 3.1 gm. % and globulin 3.2 gm. %; alkaline phosphatase was 9.60 units (normal 2-9). Six stool specimens were negative for *Amœba histolytica*. Blood culture was negative. Chest radiographs showed elevation of the right leaf of the diaphragm with some localized atelectasis above, and slight pleural reaction over both sides of the diaphragm. These findings were in keeping with an infection below the diaphragm.

Preliminary treatment with terramycin greatly improved the clinical state, with reduction of fever and decrease in the size of the mass. Operation was then carried out on December 7. A tender mass was palpable just below the left costal margin. A high left rectus muscle splitting incision was made. The mass proved to be liver, which was adherent to the peritoneum and lay beneath the incision. The posterior rectus sheath was incised, and an exploring needle inserted into the mass obtained sanguineous pus, suggesting a hæmolyzing organism. The abscess was then entered at the same point and at least a pint of the pus was evacuated. The cavity was found to be about five inches (12.5 cm.) in depth.

The pus from the abscess was sterile on culture and examination for amœbæ was negative. Drainage continued for two to three weeks and convalescence was uneventful except for a *Staph. aureus* proctitis developing as the result of further postoperative terramycin therapy. This soon subsided and he was discharged from hospital on December 30. Two days later he was readmitted when the incision partially broke down with the discharge of about 300-400 c.c. of pus. This setback was temporary and he was again discharged four days later. The drainage lessened over a week or so and then cleared completely. After a further six-week period, the patient was brought back for follow-up examination. Radiographs of the upper and lower gastrointestinal tract

were normal. Sigmoidoscopic examination was negative. The plasma albumin level had risen to 4.0 gm. % and cephalin-cholesterol flocculation was negative. Clinical improvement was slow but steady. He was last examined in July 1954, at which time he felt well and had returned to his clerical duties.

CASE 2

A.D.C., constable, R.C.M.P., age 21 years. Was first admitted to Camp Hill Veterans' Hospital on August 28, 1952. There had been some indefinite symptoms since about the first of the year, consisting of excess thirst, dry feeling in the stomach, some nausea and vomiting. He was at that time on the West coast, in British Columbia, and he had reported sick in June and again in July. On the latter occasion there had been some mid-abdominal pain but no definite diagnosis appears to have been made. Soon after this he was transferred to the East coast, arriving on August 7. He went to sea despite some anorexia and abdominal pain. The symptoms became worse and he began to have drenching sweats and some cough. He reported sick and was admitted to hospital.

Examination showed tenderness below the right costal margin but the liver was not felt. The temperature was elevated to over 104° F., the pulse was only 80-90, white cell count 14,000-17,000. Chest radiograph, blood culture, and Widal agglutination reactions were all negative. Stool culture was negative but no mention is made of search for amœbæ. The diagnosis was uncertain, but the patient was given aureomycin and then terramycin for a two-week period and the temperature subsided to normal. The patient was discharged on November 3.

He was readmitted a few weeks later with a recurrence of fever. More pain was complained of and it was localized at the lower end of the sternum. He had been having night sweats. On examination, the liver was found to be slightly enlarged and tender. It was considered that there was a collection of pus, probably in the liver.

At operation on December 6, two large liver abscesses were found, one in the left lobe and one in the right. From the right, some 30 c.c. of thick green pus were aspirated. Culture showed a heavy growth of anaerobic streptococci, which were penicillin-sensitive. The left lobe abscess could not be readily aspirated and was left untouched. A postoperative course of penicillin to a total of 35 million units was given, and improvement was rapid and apparently complete by the time of his discharge from hospital on February 3, 1953.

He has been re-examined in March and April 1953 and February 1954. His general health has been very good and the only complaints are of occasional nausea, anorexia, and ready fatigue. The liver function tests, which had shown preoperatively a cephalin-cholesterol flocculation of 4 plus and a lowered plasma albumin of 3.82 gm. %, had now returned to normal.

DISCUSSION

The above cases of liver abscess have been considered of pyogenic nature. The first patient had lived for a time as a missionary in Trinidad some 10 years previously and could have been exposed to amœbic infection, although to his knowledge he had never had dysentery. The negative culture from the pus would support an amœbic origin, but the repeated negative searches for amœbæ are against it. Further, the sequence of events as outlined in the clinical history supports a pyogenic rather than an amœbic origin.

The second patient had been very briefly in tropical waters during his war service. The pure culture of streptococci and the response to penicillin and aspiration, however, argue for a non-amœbic origin. The pathogenesis, in contrast to the first case, is unknown.

REMARKS

These two cases have been described because the condition seems to be rather uncommon. In both instances the question of amœbic liver abscess has been considered but ruled out as less likely than a pyogenic type. Other reported cases have illustrated the difficulty in labelling the cause of the abscess beyond the shadow of doubt. It is apparent that we must carefully look for the amœbic type even in temperate climatic zones, so that the distinction is more than academic.

It is to be expected that pyogenic liver abscess will be seen less and less because of improved surgical diagnosis and techniques and the availability of antibiotic drugs. Despite this, one must always consider it in the differential diagnosis of obscure febrile complaints with abdominal manifestations. It may be noted that, just as in other circumstances, the use of antibiotics may obscure the diagnosis without completely curing the condition and thus delay a necessary operation. In other cases, it would seem from published reports,⁶ the drug may in itself be curative.

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GASTROJEJUNOCOLIC FISTULA

In presenting 46 cases of gastrojejunal fistula (Lowdon, A. G. R.: *Brit. J. Surg.*, 41: 113, 1953), the pathogenesis, clinical features and literature of the entity are reviewed. Diarrhoea is the result of small bowel irritation by colonic content, for little gastric content enters the colon. The diagnosis is confirmed best by barium enema, for a barium meal may fail to demonstrate even a large fistula. Surgical operation is the only treatment, and usually a preliminary proximal transverse colostomy should be done before excision of the fistula and partial gastrectomy. If the gastrojejunal ulcer recurs, a transthoracic vagotomy is recommended.

Clinical and Laboratory Notes

USE OF POLYETHYLENE TUBING FOR COLLECTING SMALL BLOOD SAMPLES*

G. F. OGILVIE, B.A. and
L. B. PETT, Ph.D., M.D., Ottawa

DURING THE LAST DECADE, ultra-microchemical methods have been developed which permit the analysis of a number of blood constituents on a small volume of serum. Vitamin A, carotene, ascorbic acid, alkaline phosphatase, and total protein may all be estimated on as little as 0.1 ml. of serum. These methods are especially useful where large numbers of people attend a clinic for a brief examination, as in nutrition surveys or multiphasic screening programmes, but they also have value with children and when venipuncture is difficult.

Blood from a finger puncture used to be collected into glass capillary tubes, the ends of which were sealed with a laboratory cement. After coagulation, the blood was centrifuged and the tubes were broken at the junction of the serum and blood clot. The serum was then transferred with small capillary pipettes to bacteriological tubes and stored for later analysis. This procedure proved satisfactory except for the fragility of the capillary tubing and the amount of time required to process a large number of such samples.

Polyethylene tubing has recently come into common use for such procedures as indwelling catheterization and vein stripping. This material is available in a wide range of diameters and has the advantages of little or no tissue reaction and remaining pliable even when frozen. It was found that blood samples could be collected in polyethylene tubing which could be heat-sealed, thus avoiding the use of a laboratory cement. After centrifuging, the tubing could again be sealed at the serum-erythrocyte junction, providing a completely closed, pliable container for the serum sample. The time-consuming manipulations of breaking the glass tubing and transferring the serum are thus eliminated.

The material used in this method of blood collection was polyethylene tubing† with an in-

ternal diameter of 0.07 inch cut into lengths of approximately 4 inches (10 cm.). From a freely flowing finger puncture, it is possible to fill 3 or 4 lengths of tubing which will yield more than the 0.1 ml. of serum required for the tests. The filled tubes are clamped at each end with forceps which have been warmed in the flame of a candle or alcohol burner. Care must be taken to keep the forceps from becoming too hot and melting the tubing completely. Polyethylene softens and fuses at slightly more than 100° C. If the coagulated sample is chilled in a refrigerator, the clot will retract from the walls of the tubing, and this retraction facilitates separation in the centrifuge. Several lengths may be fastened by elastics to a wooden applicator for centrifuging. After separation, the section of tubing containing the serum can be sealed off with heated forceps and the sample frozen for analysis at a later time. To obtain a measured volume of the sample, the tubing is cut with scissors and the required amount is drawn up in a capillary pipette.

The Clinical Nutrition Laboratory of the Nutrition Division, Department of National Health and Welfare, at Ottawa, has been using these ultra-microchemical methods since their inception. Many of these methods require specialized equipment and techniques not readily available in all hospital laboratories or to physicians in private practice, yet the results of such analyses can be of real help in assessing nutritional status, and for other purposes. Arrangements have been made whereby a physician or hospital may use the above method to send to Ottawa samples for analysis of the important nutrients, through Provincial Laboratories. No charge is made for the analysis. Details may be obtained from the Director of Laboratories in each province.

BCG PROGRAMMES

"The extent to which this BCG programme should be developed is a question of discussion. Theoretically, if protection against tuberculosis is afforded why not vaccinate all people who have not been previously infected? Apart from the fact that prevention is not absolute, we know that 95 to 98% of all school children would have to be vaccinated and such a programme would be of no lasting benefit unless followed through by tuberculin testing and revaccinating periodically for years. . . . An all-out BCG programme would divert time and money from our fundamental objective, which is the prevention of infection. Obviously, Indians and others as listed above, who have an increased risk of exposure to tuberculosis infection, need added protection."—*Tuberculosis Control in Manitoba*, 1954, p. 24.

*Nutrition Division, Department of National Health and Welfare, Ottawa.

†Available from Clay-Adams Inc., 141 East 25th St., New York, N.Y.

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Managing Editor: T. C. ROUTLEY, M.D., F.R.C.P.[C.]

Consultant Editor: H. E. MACDERMOT, M.D.,
F.R.C.P.[C.]

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Editorials

MEDICAL EDUCATION IN CANADA

In our current issue we present a general outline of the teaching of medicine in Canada. The related problems are well recognized as complex and urgent and cannot be dealt with in detail here, but this review may be of interest in showing the growth of our schools, which have benefited so greatly by a deliberate and unhurried development.

Most medical men have views—usually very definite ones—on the teaching of medicine. It is a subject on which few can claim to be experts, but even amongst the now rapidly shifting sands of opinion we should be able to recognize stable principles. Dr. Scarlett has dealt with these elements in medicine with penetration and width of view. That he calls them intangibles makes them none the less fundamental. The teaching of these cannot be laid down in any curriculum; it will always depend on the personal qualities of the teachers themselves. Perhaps no other profession than medicine depends so much on the character of its teachers for the successful training of its students. We speak of good teachers and poor teachers, but the latter may have character which may well leave on their students a more valuable influence than does mere brilliance alone. In spite of all that is said against the lecture method and in favour of such aids as television, the first still permits of more of this most desirable personal influence.

The teaching of medicine is bound to become even more intricate, but it need not be overwhelmingly so. If we are to keep it from being only technical we must steadily bear in mind these intangibles so well set before us by Dr. Scarlett.

PHYSICIANS IN CANADA

The idea still prevails in Europe that Canada is an under-doctored country, although Sir Stanley Davidson (*Brit. M.J.*, 1: 1171, 1955) has recently administered a corrective in an article on opportunities for medical practice in the Dominions and Colonies, in which he states that "there seems to be an overproduction of doctors both in Great Britain and the Dominions."

It is valuable to have the whole situation analysed objectively, and the *Survey of Physicians in Canada, June 1954*, recently issued by the Research Division of the Department of National Health and Welfare, is therefore welcome.

This survey, based on a questionnaire and other sources of information, shows clearly that the supply of physicians has kept pace with the increase in population, the ratio now being 948 persons per physician in Canada, as compared with, say, 900 in England in 1953. The provinces of Quebec, Ontario and British Columbia have consistently since 1911 been better supplied with physicians than the others, British Columbia now heading the list with a ratio of 777 persons per physician. Curiously enough, of the 708 immigrant physicians since June 1951, one-third located in the already well-supplied Ontario.

The proportion of women physicians has slowly but steadily risen to a plateau of 4.1%, and the median age of active physicians has fallen to 42.8 years. There is a higher proportion of younger men in the West, while Newfoundland and Prince Edward Island apparently like their physicians well matured, for they have a high proportion in the 70 and over age group.

Over the period 1948-1951, there has been a vague trend away from general practice and toward specialization. The usual tendency for physicians to concentrate in large urban centres is obvious; 70.8% of the physicians in Canada work in centres of over 10,000 population, although only 48.2% of the general public live in these centres.

Canadian medical schools are now graduating almost 900 physicians a year, as against 500 a year just before World War II.

From this survey, it would appear that there is no particular cause for alarm as regards medical manpower, in the direction either of deficiencies or of surpluses, although of course no indication is given of the way in which needs are being met in the various branches of medicine.

Editorial Comments

BARBITURATE AND MORPHINE ANTAGONISTS

Ever since the preliminary announcement last year by Shaw and his colleagues¹ of the discovery of a barbiturate antagonist β, β -methylglutari-mide (NP13 or Megimide), we have awaited with interest further details of clinical trials. These workers from the University of Melbourne, Australia, have now given full details of the use of their new drug in 41 cases of barbiturate poisoning.² Two drugs are involved in their method of treatment: (1) NP13, which in animal experiments antagonized pentobarbitone, thiopentone and barbitone anaesthesia, reducing sleeping time and raising respiration rate. (2) 2:4-Diamino-5-phenylthiazole hydrobromide or hydrochloride (DAPT). The latter is only a weak barbiturate antagonist but appears to act synergistically with NP13 and also to stimulate respiration well.

It will be recalled that there are two schools of thought about treatment of barbiturate poisoning; some workers have achieved a mortality rate of as low as 1.6% among would-be suicides by simple application of anaesthesiological principles. Others still prefer to use central analeptics in spite of their known dangers. The method now described, which was successfully applied in 40 out of 41 cases of attempted suicide, has the merit of safety, since the therapeutic index of NP13 is high. General medical treatment is not neglected. If pharyngeal and laryngeal reflexes are absent, a cuffed intratracheal tube is passed; antibiotics and oxygen are used. A 5% glucose intravenous drip is set up, and solutions of NP13 (5 mgm. per ml.) and DAPT (15 mgm. per ml.) are injected separately through the tubing in doses of 10 ml. and 1 ml. respectively every 3-5 minutes. The object is to bring the patient into a "safe state" indicated by return of tone and reflexes; this usually takes about two hours in a deeply comatose patient, who will then recover full consciousness in about eight hours. Signs of overdosage with NP13 (vomiting, finger tremors) are counteracted with a little thiopentone. In one case, a patient who had been in a coma for ten days made a complete though slow recovery.

Harris³ has given a brief account of other uses for this new barbiturate antagonist. He employed it successfully to abolish the effects of thiopentone given before electroconvulsive therapy (which it did within 4 minutes), or for orthopaedic manipulations or minor urological surgery.

DAPT also has other uses in its own right. In a preliminary communication⁴ and a subsequent article,⁵ Shaw and Shulman describe its use as intramuscular injections of 15 mgm. to antagonize undesirable effects of large doses of morphine given to relieve severe pain. The authors consider it superior to N-allylnormorphine (Nalline) for this purpose, since the latter is itself not free from side-effects (DAPT causes none), may pro-

duce withdrawal symptoms when a few doses of morphine have already been given (DAPT does not), and may antagonize the analgesic effect of morphine. With DAPT it is possible to give 1-2 grams of morphine at an injection and thus produce up to 8 hours' analgesia even in cases of very severe pain. If respiratory depression becomes excessive, more DAPT is given. These findings suggest an immense field of employment for DAPT wherever a prolonged analgesia is needed.

The reports suggest that the two new drugs will prove a boon to busy hospital personnel called to the time-consuming task of rescuing patients from the effects of overdose of barbiturates, or to attendants given the sad task of relieving pain in terminal cancer.

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GENERAL PRACTITIONER RESEARCH

There isn't anything new in the idea that a general practitioner ought to help advance medical science by doing research. Up to the early nineteenth century, general practitioners did all the research. The situation has changed since then in that general practitioners and specialists have separated more and more, the general practitioner has been deprived more and more of two of his working tools—the laboratory and the hospital, and the idea has arisen that a man without a laboratory or a hospital cannot do research.

The pendulum is now swinging back. The realization that the general practitioner is the only person who gives continuity of care and is therefore the most advantageously placed for following the progress of disease, and that he sees patients with conditions virtually unknown in hospital, has led to a demand for his recall to the research team.

The whole question of general practitioner research has recently been most admirably discussed in a lecture to the Royal College of Physicians of Edinburgh by Professor James Mackintosh.* "The time has come," says the lecturer, "when we must consider how the general practitioner can be assisted in conducting field research and becoming a fully accepted member of the research team." He cautions the general practitioner not to be put off research by the feeling that he ought to carry out controlled experiments on large numbers of people. Given a consultant advisory service in statistics, such as the local health department might supply, the

*Research in General Practice. Royal College of Physicians, Edinburgh, pp. 58, 1955. Price 3/6d.

results obtained from even a dozen cases might be significant when combined with similar results from other sources.

General practitioners doing research are classified by Professor Mackintosh as "the cat that walks by himself," a rugged individualist who needs encouragement and help by a central body, and those participating in a group research scheme initiated for example by a medical association. The latter is valuable in epidemiology; its drawback is that it often seems dull to the individual and needs the stimulus of constant contact with the organizing body.

Professor Mackintosh enumerates ten types of investigation suitable for the general practitioner. They cover the following subjects: (1) hereditary defects and diseases, such as minor forms of mental deficiency, and the interrelations of various congenital abnormalities; (2) minor ailments such as colds, foot troubles and dysmenorrhoea; (3) therapeutics, including old remedies, new remedies and vaccines; (4) the care of the aged; (5) the stress diseases, such as hypertension and peptic ulcer; (6) prognosis—the general practitioner sees all the failures of the surgeon and other specialists; (7) early stages of disease; (8) mental illness; (9) epidemiology; (10) observations on the normal.

What are the limitations of general practitioner research? First and foremost, Professor Mackintosh rightly mentions defects in undergraduate training. Until recently no attempt has been made in the medical schools to show the student what general practice is like or what he can make of it, nor does he usually know enough about elementary statistics to conduct simple investigations unaided. Lack of time has also been urged as a bar to research, but it is worth taking a little time when the reward is an increased zest for everyday work.

The difficulty also arises that many of the public do not like being the subjects of investigation. Witts has recently discussed this aspect of research (*Lancet*, 1: 1115, 1955) and made a plea for frank cooperation between the people who do the experiments and those who submit to them. Says Witts, "We may yet live to see the day when it is normal practice for the patient to join with the doctor in the authorship of a publication on experimental work on his illness."

Finally, there is the comparative isolation of the practitioner, an isolation which group practice and the granting of hospital privileges can do much to break down. Here is one of the reasons for the existence of organizations like our College of General Practice.

DRINKING AND DRIVING

A study of Canadian newspaper reports reveals a pretty sharp division of opinion at times on the value in evidence of chemical tests for drunken-

ness in motoring offences. Anything that will help to clear up this rather obscure situation is welcome, and we await with interest the outcome of a series of tests which the Royal Canadian Mounted Police Laboratory staff is undertaking, to ascertain the effects of varying amounts of intoxicants on automobile driving skill. The Force has assembled an advisory committee of Canadian experts to guide laboratory staff in the execution of the tests, including consultants in legal, medical, chemical, psychological and statistical fields. An attempt is to be made to establish the level of alcohol consumption at which driving ability is seriously impaired.

Apart from actual driving tests, clinical examinations and psychophysical performance tests will be used, and a long-term project is envisaged in which other types of impairment will also be investigated. The guinea-pigs will be 68 volunteer drivers from different walks of life.

It has been suggested that the tests may disclose a "critical blood alcohol level of intoxication," but it is to be feared that this will-o'-the-wisp will continue to elude us, and that the most to be hoped for is the establishment of a minimum value, below which an accused may be acquitted, a maximum value, giving absolute proof of impairment, and a range in between, at which other evidence will still be needed.

Every responsible citizen will wish the R.C.M.P. well in this work, and hope that the results will strengthen the hand of the police in handling that arch-pest, the drunken driver.

THE PREMENSTRUAL SYNDROME

According to French observers, 84% of crimes of violence by women are committed during or immediately before menstruation. At this particular time in the cycle, women air pilots tend to crash and housewives to commit suicide. Drs. Greene and Dalton (*Proc. Roy. Soc. Med.*, 48: 337, 1955) in a discussion of the premenstrual syndrome, which affects up to 30% of all women and which may well be related to the above phenomena as well as to the better-known premenstrual fluid retention, headaches, lethargy, depression, and hypertension, insist on the need for recognition and treatment of the disabling and sometimes alarming symptoms.

For them, progesterone in adequate dosage—up to 25 mgm. intramuscularly daily, or more, from the 14th to the 26th day of the cycle—is the sovereign remedy in 90% of cases. Progesterone implantation and ethisterone by mouth are less satisfactory alternatives. Dr. Dalton is also convinced of the relationship between premenstrual syndrome and pregnancy toxæmias, and of the benefit of progesterone in the latter. Incidentally, 86% of patients with toxæmia have a history of premenstrual syndrome, though a high proportion of sufferers from premenstrual symptoms are actually relieved by pregnancy.

AN ADDRESS TO THE BRITISH AND CANADIAN MEDICAL ASSOCIATIONS*

HON. PAUL MARTIN,† *Ottawa, Ont.*

IT IS A GREAT PRIVILEGE for me to have the opportunity of addressing this joint luncheon meeting of the British Medical Association and the Canadian Medical Association. Once every quarter century, Canada has the honour of playing host to the British Medical Association, the last occasion on which the two groups met together being in 1930 at Winnipeg. At the outset, I should like, on behalf of the Government and the people of Canada, to extend a most cordial welcome to our distinguished guests from the United Kingdom. It is my hope that your important deliberations will be profitable and that you will return to your homes with pleasurable memories of your visit with us.

In addition to these annual gatherings of the British and Canadian Medical Associations, the city of Toronto has recently been the scene of the Fourth British Commonwealth Medical Conference which preceded these meetings. It is probably no exaggeration, therefore, to say that during these past two weeks there has been gathered together in this city the most illustrious and representative group of medical practitioners ever assembled anywhere in the Commonwealth.

Among the three thousand delegates who have come to Canada for these meetings are physicians from the British Isles, Ireland, Australia, New Zealand, India, Pakistan, Ceylon, South Africa and Southern Rhodesia. This is an outstanding illustration of the close and friendly ties that exist within the Commonwealth and we all hope that these representatives from other lands will have been made to feel at home in Canada. I am sure, too, that it is a source of pleasure to the membership of the C.M.A. that a number of members of the American Medical Association are also in attendance at these meetings.

This is the 123rd Annual Meeting of the British Medical Association, which is rightfully regarded as the parent of all national medical associations. It must be a matter of pride to the medical profession in Canada, and to Canadians generally, that one of our distinguished sons—Dr. T. Clarence Routley—has been elected President of the British Medical Association, an office he will hold concurrently with the presidency of the C.M.A. Dr. Routley is the second Canadian to have been thus singled out for this dual honour, which is not only a personal tribute to a man who has won the respect and esteem of all who have come to know him, but an honour to Canadian medicine.

Since this group last met in Toronto nearly fifty years ago, profound and far-reaching changes have taken place in health care generally and in the shape of medical practice. During this half century we have witnessed the development of insulin, radium, the sulfa drugs and the antibiotics as medical science continues to capture provinces that once lay beyond its frontiers. Immunizing agents have been developed and come into widespread use against such diseases as smallpox, diphtheria, typhoid fever and, most recently, poliomyelitis. Surgical techniques have been vastly improved and exciting new therapies have taken their place in the armoury of modern medical practice.

In the practice of medicine itself, the old-fashioned term "family doctor" has gradually been replaced by the more functional, if less homely designation, "general practitioner." But call him what you will, the general practitioner is still, or should be, the central figure in the provision of medical care. Hospital facilities, specialists, diagnostic aids and all the elaborate and essential adjuncts to modern health care find their focus and purpose in his daily efforts. And it seems to me that unless the advances made by specialists are made accessible in some way to the general practitioner they will remain of limited usefulness.

It is hard to over-estimate the moral and professional support to both patient and family that is given by the trusted family physician during the difficult days of ill-health. Most of us can remember our own family doctor with affection and respect—as I myself do, because of the active life made possible for me by his skill and sympathetic care. The family doctor is very much in my mind at this time because, later this week, the people of my own community will be gathering together in Woodlee, Ontario, to pay tribute to Dr. S. F. Millen on the completion of fifty years of kindly and skilful ministrations to the needs of the people he has served so well.

Yes, the little black bag is still the symbol of a profession that has done a distinguished job in Canada. With each new advance in medical science, members of your profession have redoubled their efforts to put into daily practice the new techniques that have been discovered. As a fair return for medical progress in other countries, they have made their own important contributions to world medicine. Canada's physicians have also developed a high reputation for professional competence and are widely respected for their strict adherence to all that is best in the traditions of the healing art of medicine.

Not alone in quality, but in numbers as well, Canada is singularly fortunate in its medical resources, with one of the highest ratios of physicians to population of any country in the world. And here I might say that during the past three years alone, we have welcomed to Canada and admitted to practice more than 700 physicians trained in the United Kingdom and other parts of the world who have chosen to make their homes here.

Although we now have over 16,000 active doctors in Canada for a ratio of one physician for every 948 persons, there are serious discrep-

*Presented at the Annual Meeting, Royal York Hotel, Toronto, June 23, 1955.

†Minister of National Health and Welfare.

ancies and inequalities in the supply of doctors as between rural and urban areas and between the various provinces. In this connection, figures recently compiled by the Department of National Health and Welfare indicate that the ratio ranges all the way from one doctor to every 777 persons in British Columbia to one doctor for over 2,100 in Newfoundland.

Somehow the problem of working out a system for the adequate distribution of medical services must be solved if the people of this country are to have the health care they require. This applies to both hospital and other health facilities on which the doctor must increasingly depend. During the past seven years, since the inauguration of the National Health Programme, federal and provincial authorities working together co-operatively have made rapid progress in bringing these diagnostic, hospital, laboratory and other facilities that support the physician in his work to more desirable and more uniform levels.

And here I might note, in passing, that one of the great merits of Canada's National Health Programme is that it provides the machinery—and frequently the money—for prompt and decisive action on urgent public health problems of concern to the entire community. A recent illustration has been the federal-provincial Salk vaccine immunization programme. I learned with much pleasure of the resolution passed by the C.M.A. last week and I wish to acknowledge here, on behalf of the Government of Canada, and I think I may say of all provincial governments and public health workers, the generous tribute paid by this Association to a public health programme that was an outstanding example of co-operation in action. Let me add that the successful prosecution of the Canadian Salk-vaccine programme was greatly encouraged by the constructive and understanding attitude of the medical profession.

There is a second and equally urgent problem which has a direct bearing on the distribution of our medical and other health resources: the inability of many families to bear out of current income the sometimes crushing costs of illness.

Two years ago I quoted figures which set Canada's total national health bill at something in the neighbourhood of \$675,000,000 to \$700,000,000 for the year 1951. I have just had these estimates up-dated to 1953 and it would appear that in that year our total expenditures on health were of the order of \$840,000,000. It is most significant that payments by governments—of which nearly three-quarters were provincial and municipal—accounted for 42% of the total national health bill, while insurance in various forms made up 15%, for a total of 57% from these two sources.

This means that less than one-half—43% to be precise—of the total national health bill was made up of payments made directly by patients to

doctors, hospitals, dentists, and nurses and for other health services. It is of interest to note that, of the total commitments on health, \$710,000,000, or 85%, is used to purchase preventive and treatment services.

Let me quote one further set of significant statistics based on estimates just compiled by my Department. No less than 59% of the Canadian people now have some prepaid protection against the cost of hospital care, while 36% carry medical care insurance of one kind or another. This coverage takes a variety of forms. For example, there are at present 17 major non-profit health insurance plans in Canada, of which 15 offer medical care benefits and eight hospital care. Many of these are sponsored by the medical associations of the regions in which they operate.

There are plans of the consumer co-operative type as well as private corporations with medical, hospital and lay representatives on their governing boards. In addition to these plans, at least 60 of the private insurance companies offer group or individual contracts. There are also a number of fraternal, union and industrial programmes which provide their members with some degree of hospital medical care benefits. In four provinces, there are government-sponsored programmes covering from 40 to 100% of the population for hospital service and, in some cases, including small medical care programmes. Finally, the Federal Government provides extensive health services for certain special groups such as our native population of Indians and Eskimos, members of the armed forces, war veterans and sick mariners.

I have quoted these statistics to underline three rather significant trends:

1. There is a growing interest among Canadians in prepaying the costs of one of the major contingencies that threaten family security.
2. There is a wide diversity in approach to this problem as indicated by the variety of plans—a development that has perhaps been understandable in a federal state like Canada with its wide differences in local conditions and needs.
3. While a substantial number of Canadians now enjoy a measure of prepaid protection against the cost of health care, there remains the problem of finding some satisfactory method that is in keeping with Canadian traditions, by which this protection can be made more extensive.

Today, people are thinking more and more about these problems, and political parties, professional associations like the C.M.A., voluntary organizations, labour groups, churches and many others are taking an increasing interest in finding the most satisfactory solutions. It is only natural that the Minister of National Health and Welfare and the Government of which he is a member should be concerned in any effort to improve the health of the Canadian people. Our objective is to work out some scheme that will provide the most effective way of meeting the

problem without destroying the fundamental patterns of our society.

Governments—on all levels in Canada—and all of us must face up to the implications of these problems. Just as I resent the false suggestion that the medical profession is only concerned with its own problems, so I am concerned by the allegation that the Government is insensitive to human need or disregards the health of its people. This is one of the most difficult social problems that the governments and the people of Canada will ever be called upon to solve and it must be worked out co-operatively and with the best wisdom and judgment of which we are capable.

Down through the ages, to maintain the common health has been recognized as one of the great tasks of society. Institutions have been evolved to serve each of the basic needs of life, whether it be the establishment of a system of law, the preservation of spiritual and moral values, the education of the young, or the warding off of a plague. The health of the people is among the most important of these tasks, and the provision of adequate medical care is at once one of the most difficult. Because medicine is an art as well as a science, economic, social and cultural factors must be set alongside purely technical considerations.

And this brings me to the important distinction that must be made between the technology of medicine and its organization. In technology we can include all of the arts and skills of diagnosis and treatment that constitute the practice of the profession of medicine. Organization, on the other hand, embraces all of the arrangements, social and economic, by which medical care is brought to the individual.

It would seem that the brilliant technological progress that has been made in recent years has outstripped our joint efforts to fully organize medical service satisfactorily. As a result, can we not ask ourselves whether or not the nation's people have felt the full benefit of the superlative technical skills that have been developed by the medical profession? The doctor's craft, with triumph after triumph to its credit, is ever reaching new levels of excellence. Must we not, together, see to it that this prodigious scientific progress is made as widely available as possible?

This problem was clearly sensed by Dr. Harvey Smith who, speaking to this same audience—the joint meeting of the British and Canadian Medical Associations—used these words in his Presidential address at Winnipeg in 1930:

"The economic basis upon which practice is being conducted has been the object of widely expressed dissatisfaction on the part of both the profession and the public, and a multitude of agencies has been called into action to investigate and solve the intricacies of this most difficult problem. A prolific source of criticism and of dissatisfaction arises from the failure of our profession to provide competent service to the various sections of the community under a financial plan that will meet the needs of every class of citizen.

"If corporate medicine cannot or will not recognize and meet the demands so insistently made for the development of a system under which competent medical aid will be available—for rural districts especially—no protests can be raised if governments or municipal bodies take steps to inaugurate a system of medical service of whatever type and character may seem best."

Quite frankly, I think that Dr. Smith was perhaps unduly harsh in laying the blame for failure to organize the economics of medical care entirely on the doorstep of his own profession. This is an extremely complex and intricate problem, and its solution will call for the best efforts and the best thinking of many professional disciplines—law, the social sciences and, of course, medicine itself.

You will all agree, I am sure, that the doctor is not alone in possessing the right to determine the nation's medical welfare—particularly when this involves, in addition to medical skill, questions of social organization that are, quite understandably, usually outside the province of his professional experience. But equally, it would be most unfortunate if the widespread demand that the common health be served should lead to any solution that disregarded the legitimate interests of the medical profession or destroyed traditional relationships.

In attempting to work out this problem intelligently and responsibly, we must have the active co-operation and participation of the medical profession. What we must steadfastly seek is the most orderly approach which the accumulated knowledge and wisdom of medicine and the social sciences can devise. The problem, simply stated, is to find some equitable method by which people can purchase adequate health care on terms that they can afford, while, at the same time, preserving the integrity of the medical profession and setting up safeguards against the hazards which doctors and others, including the Minister of National Health and Welfare, rightly foresee.

It need not involve professional regimentation; it is not a matter of providing the state with a monopoly of power. But any adequate solution to this complex social and economic problem must take realistic account of financial and constitutional factors; the need for maintaining professional freedom and respecting the essential traditions of medicine; the assurance of adequate supporting health facilities and services; and, above all, the needs of the people to be served. What is sought is not socialized medicine, but socially sound medicine—satisfactory medical care for every member of our society.

In medicine the terms "private" and "social" are closely related, for, in pursuing his private practice, the doctor is performing an essential social service. The problem is not to interfere with the already high standard of medical practice but rather to develop some organizational structure that will make the best of care more widely available. Whether it takes the form of

a programme with greater public participation, a mutual association of the medical profession and the public or an extension of existing voluntary plans, the important thing is that no compromise should be made with the high standards of medical practice which we all believe in and which we all want to see maintained.

Some members of the medical profession sometimes express fears that change in the terms of medical practice in Canada might lead to the loss of hard-won and highly prized ideals. Foremost among these fears are those concerning quality of service; the doctor-patient relationship; freedom of choice; and incentive to perform one's best work. But is it not true that these ideals are closely related to professional standards as well as to the manner in which medical care is organized?

I am convinced that, whatever plan we may devise co-operatively, it is of the greatest importance that these desirable ideals should be maintained. It has long been recognized that the patient should have the right to select his own doctor, and I believe that any system of organized health care should ensure the maximum freedom of choice to the individual so that the personal element in the intimate doctor-patient relationship will be preserved.

Canada's health services rest firmly on the foundations that members of the medical and other health professions have so firmly laid. It is only sensible to see that, in any new approach agreed on, nothing is done to lower the high standards of medical training, research and practice for which Canada has won world recognition. It is surely not beyond our power—working closely together and looking to your profession for leadership—to make health care more widely available while making sure that nothing is done to lessen in any way the quality or effectiveness of the physician's service.

In medical practice, as in the practice of law and of any other profession, the greatest motivations and incentives are the desire to serve, the satisfaction of achievement, and the urge to keep faith with one's calling. The whole history of this honourable profession is illumined by the ideals and strict code of ethics that elevate the relief of suffering over any considerations of personal gain.

There is no reason why, with the preservation of these ideals, the doctor should not continue to enjoy a standard of life that will enable him to give his very best service. And because he recognizes this, the physician will also recognize that others are entitled to an adequate standard of good health and security.

Doctors will appreciate more clearly than others that the more efficient organization of medical care need not restrict the physician but should serve to enlarge his opportunities for service and to improve the facilities available to him. The development of a satisfactory system,

however, cannot be successfully achieved without the active participation and whole-hearted co-operation of the medical profession. Whatever solution may yet be devised in Canada—whether it be an extension of existing voluntary programmes, a plan with greater public participation, or one of the variations or combinations of these and other alternatives—it must respect constitutional rights and responsibilities; it must be adaptable to suit varying local conditions and needs, and it must draw fully on the wisdom and competence of the medical profession to the end that good health care may be brought more within the reach of all Canadians.

There already have been many decades of fruitful collaboration between members of the medical profession and governments in building a better structure of health services for Canadians. Now, in the same spirit of close co-operation and mutual understanding, I am confident that together we can find an orderly and equitable solution to our problems in the organization of health care.

Let us, then, within the limits of the resources of this country, diligently pursue our common objective of making the improved health services that we both are building reach out to benefit all Canadians. I am more than ever convinced that organized medicine, knowing what can and should be done, and government, anxious to discharge its responsibility to the people, can and will find ground for agreement in their common concern for good health.

Today I have touched the periphery of a difficult social and economic problem with important professional implications. What I have attempted to do is to indicate my personal interest and concern and that of the Government of which I am a member, and to enunciate certain principles which I believe should guide our future thinking. In closing, let me recall the words I used in speaking to the Canadian Medical Association in Winnipeg two years ago:

"What we are trying to do is to build a sound structure of health services that will preserve the traditional doctor-patient relationship; that will give maximum freedom of choice to the individual; and that will maintain the constitutional balance of governmental responsibilities. Of course, too, we must at all times consider the capacity of the individual and of the nation to sustain each added burden. I am sure that in the years ahead, when we look back on the development of Canada's National Health Programme, when all the obstacles and difficulties have been largely swept aside, when the best of health care is more readily available to everyone, we will recognize the wisdom of our steady, consistent and dynamic approach to this problem in Canada."

I have spoken of the need for bringing health more within the reach of our people. But in this sick and uncertain world of 1955, with the threat of nuclear warfare that now haunts civilization, we must also give thought to the health and soundness of the international community. In our efforts in the United Nations, that venture in world co-operation that is now marking the

tenth anniversary of its founding in the shadow of San Francisco's Golden Gate, we can learn much from the principles and practices of medicine. We must develop skill and judgment in diagnosing the world's ailments; we must be prepared to take prompt and effective action in removing those causes of tension that might lead to conflict; we must determine to root out the ugly cancers of mistrust and misunderstanding

that can predispose men and nations to violent action.

Given skill and patience and a strict adherence to the traditions and principles that we know to be right, I believe that we can yet evolve some means of organizing the affairs of nations so that men and women everywhere can look to a future bright with the prospect of freedom and security in a world at peace.

ANNUAL MEETING—SCIENTIFIC PROGRAMME

It is impossible to report all the papers given in the Scientific Programme or to publish all this material without seriously dislocating the Journal's routine. In this issue we are printing some summaries of papers which appeared to be of fairly wide interest.

GENERAL SESSION, JUNE 23

The increased use of Cæsarean section in difficult labour was commented on by Prof. Dugald Baird of Aberdeen, who based his remarks on details of all first births in the city of Aberdeen, pointing out the need for studying a total population to eliminate the bias that might arise from study of a hospital series alone.

Prof. Baird said that a healthy, well oxygenated baby is little affected even by prolonged and difficult labour unless undue force is applied to the head during instrumental vaginal delivery. In young women, placental function is so good that only extreme postmaturity will cause dangerous anoxia, but after the age of 25 placental function becomes steadily less efficient, especially after 40 weeks of pregnancy, while an increased tendency to disordered uterine action and cervical rigidity further enhances the risk of fetal anoxia. Induction of labour will lessen the risk of anoxia; induction has not led to reduction in use of Cæsarean section but has lowered the stillbirth rate. There is no specific test by which the risk of stillbirth can be assessed, but the outlook is very unfavourable in the primigravida over 30 and under five feet in height, especially if pregnancy is prolonged beyond 41 weeks and the head is occipito-posterior. In most such cases, rupture of the membranes might be tried and would lower the Cæsarean section rate.

The ideal to aim at was the lowest stillbirth rate and the lowest Cæsarean rate. In Prof. Baird's experience, the optimum Cæsarean rate

in primigravidæ was 3 to 5 per cent, depending on the age distribution, standard of health and nutrition in the group.

GENERAL SESSION, JUNE 24

In his address on *what not to do in gallbladder surgery*, Sir Heneage Ogilvie pointed out that a gallbladder operation must never be regarded as an emergency. Neglect of this advice was disastrous. In 19 cases out of 20 of acute cholecystitis, the inflammation would subside with rest and chemotherapy and the bile begin to flow again. If it did not, the surgeon should usually be content to drain the organ, and later perform an internal cholecystectomy.

The common duct should never be explored unnecessarily, i.e. without evidence that it contained stones. Every experienced operator should be able to say with confidence whether stones were present or not. To miss a duct stone occasionally was better than to become a habitual duct opener. If a duct had to be opened, as little as possible should be done inside it. The stones must be removed as gently as possible, and a probe passed gently into the duodenum. When the surgeon felt in doubt whether he had removed all the stones, he might use operative cholangiography, but this procedure should not be necessary in more than one operation in fifty.

When the syndrome of papillary stenosis occurred years after operation, it was probably due to forcible dilatation and rupture of the sphincter of Oddi. The papilla should never be dilated to a diameter of more than seven millimetres or the sphincter cut except under direct vision.

Diathermy must never be used inside the abdomen; there was no finer culture medium than cooked liver.

A gallbladder bridge or pillow should never be used, because the access it gives is illusory and it may hyperextend the spine so far as to cause permanent backache.

ROUND TABLE CONFERENCE: ALCOHOLISM IN INDUSTRY, JUNE 21

The problem of alcoholism in industry was discussed by a panel consisting of Dr. W. Harvey Cruickshank (chairman), Mr. H. David Archibald, Dr. R. G. Bell, Dr. D. G. Cameron, Dr. G. E. Hobbs, and Dr. J. K. W. Ferguson.

Generally speaking, there is neither recognition nor acceptance of the fact that alcoholism is a serious problem in industry. This is partly due to a tendency of employees at supervisory level to "cover up" for alcoholic workers. The policy of some firms is to fire all alcoholics whom they discover among their employees; but if the concept of alcoholism as a disease is accepted, it is entirely reasonable that it should be dealt with as a health problem among the employees. The industrial medium provides a unique opportunity for the early recognition and management of the problem drinker; through case finding, referral and follow-up the industrial medical department can attack the problem.

Early diagnosis is all-important. Absenteeism records are helpful in detecting many alcoholics. Management—foremen and supervisors—can be trained to notice early signs of alcoholism. The industrial medical department can set up short courses on how to recognize the potential alcoholic. A number of alcoholics recognize their own need for help. A great many feel in retrospect that they have never had control of their drinking; this can be useful in early diagnosis in industry. Fatigue may be a factor in alcoholism; doctors concerned with the alcoholic in industry should recognize restlessness, irritability, or a specific condition of general health; there should be an assessment of every factor that makes people turn to alcohol as a means of easing the strain of living. Fatigue must be closely watched in the first year of abstinence from alcoholism or heavy drinking.

Alcoholics Anonymous has revolutionized the treatment of alcoholism and is the most readily available and most satisfactory source of help to industry. It is equally successful with the initial case and the chronic alcoholic. The industrial medical department can play a useful role in follow-up, but A.A. is the most useful agency in this work. With an enlightened attitude on the part of industry and liaison with A.A., much can be accomplished.

In many firms 75% of the alcoholics discovered can be so improved that they do not have to be discharged. In clinics the prognosis is not so good, but a competent clinic should be able to direct 50% of its patients into a satisfactory life of abstinence.

Whatever programmes are undertaken for the detection and management of the chronic alcoholic, the patient's confidence in the doctor should be the same as in any other doctor-patient relationship.

ROUND TABLE CONFERENCE: IS PRENATAL CARE WORTH WHILE?

JUNE 22

This challenging subject was discussed by a panel headed by Dr. Elinor Black of Winnipeg and including Prof. Dugald Baird, Aberdeen; Dr. Jean Davey, Toronto; Dr. F. S. Hobbs, Vancouver; and Dr. E. J. N. Briggs, Winnipeg.

In defining minimum antenatal care, Prof. Baird said that the patients who most needed it were the ones who didn't come. The panel thought that a full history should be taken and physical examination made at the first visit. Use of a pelvimeter was advised and a pelvic radiograph if trouble was anticipated, though Prof. Baird felt that these measures encourage unnecessary Caesarean section.

Fetal development was most affected by diabetes, virus diseases and the Rhesus factor. The most serious virus diseases, such as smallpox, usually cause abortion. Poliomyelitis seems not to affect the fetus, though the virus enters it.

The pregnant woman should have one quart of milk daily with a varied supply of meat, eggs, fish, cheese, fruit and green vegetables. She should not overeat. Prof. Baird mentioned the high incidence of pelvic deformity in small women, due to malnutrition, and suggested that many stillbirths in elderly primiparae were due to toxæmia through overeating.

All patients should have 15 grains of ferrous sulphate daily through pregnancy until a full month post partum. If iron was not tolerated by mouth, it could be given intravenously.

Dr. Hobbs had found external version very useful in breech presentation. No anaesthetic was needed; the attempt should be very gentle and should be made at each visit during the later months of pregnancy. Prof. Baird preferred anaesthesia, but said that the attempt must then be even more gentle.

For pre-eclampsia, Prof. Baird had found rest in bed and phenobarbitone very useful, and a salt-free diet with fluid restriction helpful. Dr. Davey had no great faith in hypotensive drugs in toxæmia; they might cause reduction in urine output, headaches and tachycardia. Dr. Briggs made some observations on saving the baby in cases of toxæmia. A three-pound baby had a 50% chance of survival and the safest thing was to deliver the baby as early as possible.

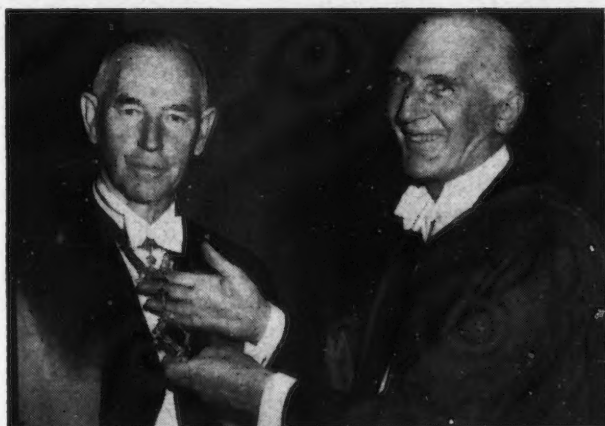
In summing up discussion, Prof. Baird remarked that it was the mother who had the baby and not the doctor. Much depended on her physique and on the life she had previously led. The technical side of obstetrics should not be overstressed.

ROUND TABLE CONFERENCE: RECOGNITION AND MANAGEMENT OF DEPRESSIVE REACTIONS

JUNE 22

This conference was chaired by Dr. R. O. Jones of Halifax, N.S., and the panel included: Dr. Ewen Cameron, Montreal; Dr. W. L. Neustatter, Ewell, England; Dr. John Dewan, Toronto; and Dr. Keith Yonge, Saskatoon. Dr. Dewan considered that depressive reactions were most amenable to treatment. There was often no apparent reason for the depression, which was hard to distinguish from anxiety state. Dr. Yonge stated that the case might come to the doctor in five ways. (1) The patient might say that he felt depressed. (2) The relatives might appear and ask for help. This was a most serious matter. (3) The patient might complain of feeling strange, but be unable to express his feelings. He might fear a major mental breakdown. A "hyperactive inactivity" denoted great anxiety. (4) The patient might complain of physical symptoms such as loss of

ECHOES OF THE CONVENTION



Sir John McNee, retiring President of the B.M.A., displays the chain of office which he has just placed round the neck of his successor in office, Dr. T. C. Routley.



Dr. G. F. Strong greets the Bayleys, father and son, from British Guiana at the Commonwealth Conference.



Six new distinguished doctors of laws of the University of Toronto: (from left to right) Dr. W. P. Warner, Dr. T. C. Routley, Dr. E. A. Gregg, Dr. Stanley Graham, Sir John McNee and Dr. G. F. Strong.



Dr. S. A. Siddiki of Pakistan gives a lesson in geography to four colleagues at the Commonwealth Conference: (left to right) Dr. R. Southby (Australia), Dr. P. Baron (Southern Rhodesia), Dr. R. T. Bayley (British Guiana), and Dr. H. A. Clegg (United Kingdom).



Mr. W. A. Leslie, President of the Canadian Pharmaceutical Manufacturers Association, holds up the Medal of Honour of the Association, which he is about to present to Sir Henry Dale.



You might not believe it, but these are doctors and their ladies at the O.M.A.'s square dance on June 21. One figure in the left foreground appears, however, to be no lady.

We are indebted to the Telegram Publishing Company Limited, Toronto, for all these pictures.

appetite, constipation, and loss of weight. He might also have more obscure conversion symptoms, such as an emotional heartache. (5) He might complain quite loosely of feeling depressed when he is actually tense and anxious. Dr. Neustatter stressed that every depressed patient is a potential suicide and that a decision must be made whether the patient should be treated as an inpatient or outpatient. Self-reproach and agitation increased the risk of suicide. It was also necessary to decide whether electroconvulsive therapy (ECT) or psychotherapy was needed. The patient needed rest and sleep. Some sedatives made the person feel worse; Dr. Neustatter was not in favour of phenobarbitone. The patient must be allowed to get it off his chest and the therapist must listen patiently and get below the surface of the guilt reaction. Dr. Ewen Cameron discussed details of treatment. Eight sessions of ECT might be given and the case then followed up for one month. Relatives should be advised that memory would be impaired for one to two months. Those with repeated depression might need ECT over years. Cases with senile or arteriosclerotic states were not suitable for ECT. Anxiety must be cleared up first with either drugs or sleep. The combination of chlorpromazine and ECT was dangerous. Nitrous oxide inhalation once a day for several days had been found useful.

The following points were made in answer to questions: It was not necessary to ask the patient whether he felt suicidal; he always did. It was hard to say when the general practitioner should pass the patient on to a specialist. If he felt he understood the situation he might continue treatment, but he should not use ECT or nitrous oxide. The advice to take a holiday was not too useful and might be disastrous.

ROUND TABLE CONFERENCE: MANAGEMENT OF RHEUMATOID ARTHRITIS, JUNE 23

A round table conference on the *management of rheumatoid arthritis* was held before a large audience on Thursday, June 23, with Dr. Wallace Graham as chairman.

The panel took up the question of the use of gold. It was generally agreed that this has a place in treating rheumatoid arthritis, even though its effect is not dramatic. It has the advantage of often producing fairly long remissions; one speaker spoke of a minor advantage in maintaining contact with the patient. The toxic effects had to be watched very carefully; they could be both serious and persistent. One speaker preferred a single course to repeated courses. Another held that it was hard to evaluate the place of gold, because the mechanism of action was unknown. Butazolidin had its uses, but should not be employed as first choice. The side-effects required careful watching: one speaker referred to its not infrequent aggravation of peptic ulcer. Its benefits should appear in the first few weeks; otherwise it was better to discontinue it. One speaker emphasized the precaution of restricting salt intake in some patients on this drug. It was probably more useful in short-term cases.

The discussion on steroid hormones took up the major part of the time. It was agreed in general that these hormones should not be used until other measures had been tried. In very acute cases, however, they could, as one speaker put

it, get the patient "over the hump." Even then their masking effect should never be forgotten. Then they were useful in overcoming contractures and facilitating physiotherapy by abolishing pain. Finally, in some patients who could get up and about but could not work, these hormones were useful in allowing them to carry on: this was an important economic consideration. The speaker from Great Britain took a rather more critical view; from experience gained in the U.K., it was difficult to find many patients suitable for long-term treatment with these hormones. By the time all those obviously unsuited had been taken but the residue was very small. He thought that the story of cortisone was one of steady recession from the initial enthusiasm. Another speaker was not convinced entirely by the U.K. statistics. He still thought that hormonal treatment could be of great value in the selected case.

In summary, the chairman spoke of the need for taking the long-term view of the patient's disease. We must go slowly in using drugs of any kind. Nothing must ever be allowed to replace the initial basic programme of treatment on general lines, with the salicylates as needed. Nothing had been said in the discussion about the value of psychotherapy but that did not mean that its great value had been overlooked. Rehabilitation was one of the most important aspects of the treatment of rheumatoid arthritis, and attention was drawn to the difficulty of placing the patient who had no skilled training. If the basic programme of treatment was observed, more than 80% of patients might expect benefit.

SECTION OF CHILD HEALTH, JUNE 21

Dr. V. Mary Crosse of Birmingham commented on the *causes of neonatal mortality and morbidity* in England and Wales, 1950-53. Uncomplicated immaturity accounted for 30% of deaths, and it is likely that about 60% of all those dying soon after birth were premature. Malformation was responsible for 15% of deaths, and birth injury for another 15%. Asphyxia and atelectasis accounted for 18.9% of deaths, but Dr. Crosse pointed out that the true hazard of birth is only seen when injuries and asphyxia are considered together. Pneumonia of the newborn was the most important infection; all infections accounted for 9.4% of deaths. Erythroblastosis accounted for 3.5% of deaths, and hæmorrhagic disease for 1.5%. The figure of 1.7% for deaths due to disorders attributed to prenatal maternal complications gives no idea of the true influence of such complications, which in Birmingham have been assessed as a primary factor in 28% of deaths.

A study of these figures shows that most of the causes of death originate during pregnancy or labour, and this fact points up the need for full cooperation between the obstetrician and the pædiatrician.

SECTION OF CHILD HEALTH, JUNE 22

In discussing *drug treatment of gastroenteritis*, Dr. Bernard Schlesinger of London emphasized that the antibiotics have not superseded effective rehydration of the child under proper biochemical control. Modern intravenous techniques had done more than anything else to lower mortality in this condition.

A difficulty in the assessment of results of antibiotic treatment was that the role of the various agglutinable coliforms—claimed as the primary infective organism—was still uncertain. The relatively insoluble sulfonamides such as sulfaguanidine had not been therapeutically successful in countries where *Salmonella* and *Shigella* infections were uncommon. Epidemic gastroenteritis due to virus infection was best treated with aureomycin.

The speaker then discussed the assessment of antibiotics in therapy of gastroenteritis assumed to be due to a specific *B. coli*. Such assessment was based on: (1) *in vitro* studies; (2) clinical observation alone; (3) clinical observation with bacteriological control. Streptomycin had usually proved unsuccessful and terramycin was not much better. Chloramphenicol and sulfadiazine appeared to be most effective, though sometimes not dramatically so. Antibiotics should always be given, if only to combat concurrent parenteral infections.

Arobon, a preparation of carob flour, had been valuable in controlling persistent bowel hurry after the acute phase was over.

Dr. W. W. Payne of London outlined the changes in *fluid and electrolyte balance in infantile gastroenteritis* and described a rule of thumb method of treatment in situations where no adequate laboratory facilities exist. Dr. Payne emphasized that the extracellular fluid bears the brunt of the early changes, and the intracellular fluid is called on only when the condition worsens. Fluid lost is alkaline and isotonic, at first resembling the salt fraction of plasma and later containing much potassium; acidosis changes to an alkalosis late in the case.

Treatment depends on the stage of the disease. Where less than 2½% of body weight has been lost, simple oral feeding is advised with one-third normal saline and glucose in amounts of 2½-3 oz. per lb. body weight. With up to 5% weight loss, the subcutaneous route may be used; at 10% loss, intravenous therapy is needed, and in severe cases treatment must start with 10 ml. per lb. one-sixth molar sodium lactate in one hour, followed by 20 ml. per lb. of a mixture of citrated plasma with an equal volume of 5% glucose in two hours. Then 20 ml. per lb. of a mixture of one part of lactated Ringer solution with two parts of 5% glucose is given 3-hourly until free urine flow occurs. When this happens, fluids containing potassium are used (Darrow's solution). In all cases, total fluid intake should exceed by 2½ oz. per lb. per day the amount lost in the stools.

SECTION OF DERMATOLOGY, JUNE 22

Dr. David I. Williams of London gave a witty and valuable account of some aspects of the *Whitfield tradition in dermatology*. Arthur Whitfield, the London dermatologist who died in 1947, had a number of treatments which he prescribed with authority and confidence. In Dr. Williams's opinion, many of these gave better results than more modern equivalents. For example, he doubted whether there was any fungicidal preparation better than Whitfield's ointment, always provided that a correct diagnosis had been made. Whitfield also produced a lotion for use on ringworm of the feet. This consisted of benzoic acid 5%, salicylic acid 3%, acetone 25% and spirit vini indust., used as a wet dressing four

times a day on gauze between the toes, after stripping off dead skin and roofs of vesicles and pustules. After a week of this, Whitfield's ointment was rubbed in twice a day, continuing for four weeks after apparent clinical cure, and then using a simple foot dusting powder for another two years. The use of cotton socks by day and night, and of separate bathmats for the afflicted, was also advised.

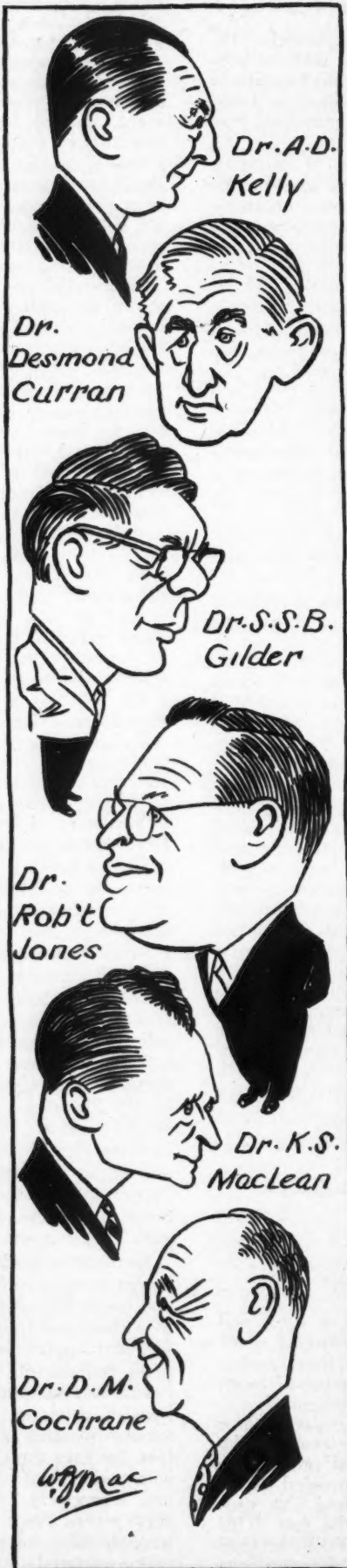
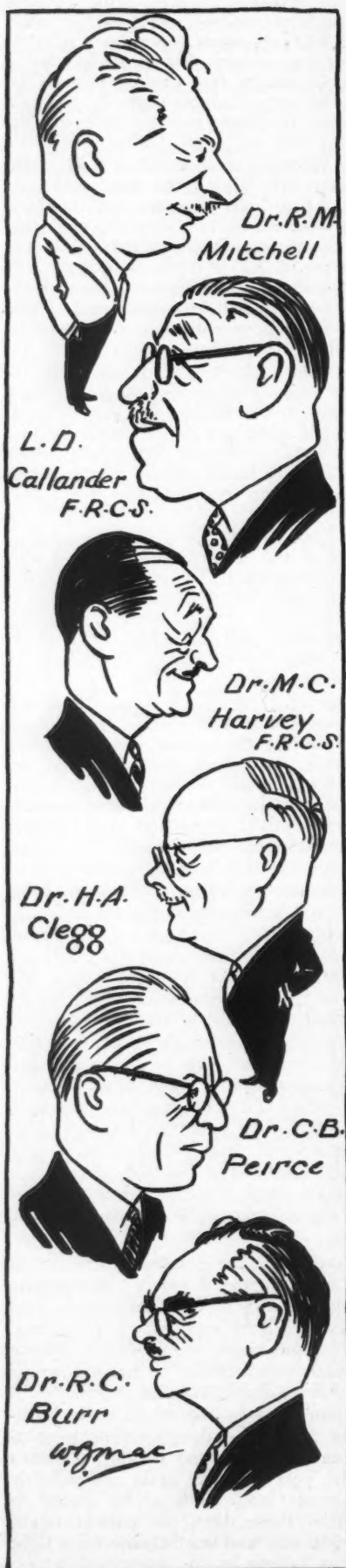
For psoriasis, Dr. Williams recommended 0.5% dithranol in Lassar's paste but not on the head and neck or on angry psoriasis. For scalp psoriasis, ung. hydrarg. nit. dil. should be rubbed in on two nights a week and shampooed off in the morning. On the other nights and each morning a cream of liq. carbinis deterg. m. 60, salicylic acid gr. 10 and emulsifying base to one ounce should be applied. Arsenic in judicious doses and sodium iodide, with thyroid in menopausal cases, were internal remedies worth a trial.

Warts required confident handling. The application of 3% formalin for 10 minutes night and morning often brought success in three or four weeks. For small numerous flat warts, Whitfield used a lotion of mercury biniodide gr. 2, salicylic acid m. 60 and 70% spirit to one ounce, dabbed on every two hours and let dry. Freezing with carbon dioxide snow was more effective if the wart was first soaked in water.

Pruritus ani could be treated by avoidance of soap and water, cleansing of the affected area twice a day with inert oil, use of cottonwool and normal saline after defaecation, and application of 2% camphor and 1% phenol in zinc cream twice a day. A successful and more elaborate cream was: wool fat m. 60, ichthyol gr. 20, camphor gr. 10, olive oil ½ ounce, zinc oxide ½ ounce and lime solution m. 180.

Dr. R. Mason Bolam of Newcastle upon Tyne discussed *acute skin diseases in general practice*, mentioning the importance of reassuring the patient, who was often very anxious. He dealt particularly with impetigo, infected seborrhoeic dermatitis and contact dermatitis due to drugs. He thought that the recent apparent increase in incidence of impetigo might be related to the higher incidence of penicillin-resistant staphylococci. The nature of the eruption had changed; a large circinate type of lesion on the trunk was now common, with bullae alongside the large shiny red areas; smaller crusted lesions often contained streptococci. Treatment of associated factors—pediculosis, scalp seborrhoea—was essential. Dr. Bolam's favourite prescription for impetigo was a 1% aureomycin cream. The cream he used was rapid in effect (2-4 days) and safe. Crusts must first be removed. Infected seborrhoeic dermatitis required rest in bed, penicillin injections, cutting off of *all* the hair of the scalp, and application of moist compresses of a weak antiseptic such as 1% Phenoxetol on white lint. The remaining eruption would yield to 1% ichthyol in calamine lotion. Carbohydrate should be restricted, and sedatives given day and night. Bathing and washing of the scalp should not be permitted in the early stage. Fissures behind the ears or at the angles of the mouth might be painted daily with tinct. benzoin co.

Dermatitis medicamentosa has increased greatly in recent years, parallel with increased use of sulfonamides and penicillin. Routine treatment includes rest in bed in a darkened room where light sensitivity is suspected, frequent application of cold water compresses to relieve gross oedema of eyelids, application of normal saline compresses to check blister formation and oedema, dabbing of calamine lotion all over the body, daily intravenous injection of 10 c.c. 10% calcium gluconate solution for four days, oral administration of antihistamines with sedation at night, permanganate soaks and possibly oral terramycin for sepsis, and cortisone by mouth in very severe cases. After three days, the patient might have dressings of simple zinc and starch paste on a light cotton material.



SECTION OF MEDICINE, JUNE 20

Dr. William Evans of London gave his views on *treatment of coronary occlusion*, first expressing his fear that this condition might be diagnosed when it was not present. There were three reasons for a false diagnosis of coronary artery occlusion: (1) acceptance of pain as of cardiac origin, (2) neglect to search for physical signs, (3) failure to realize that a normal electrocardiogram excludes cardiac infarction.

He warned against use of new and untried remedies in coronary occlusion; one should curb the urge to do something when nothing needed to be done. The aim of treatment in the stage of occlusion was to treat shock (warmth, rest), relieve pain (morphine), and promote healing of the cardiac infarct by physical rest for a month or more, followed by a month's convalescence. Physical effort in the early stages should be restricted to what does not cause tachycardia. Quinidine should not be used to prevent ventricular fibrillation; digitalis should not be withheld if symptoms of heart failure appeared. Anticoagulants were unnecessary. Continued reassurance was required. Wherever possible the patient should return to his old occupation; resettlement too often meant unsettlement.

For continued use after an attack, glyceryl trinitrate, used intelligently, was the remedy of choice. It should be taken whenever the patient was about to undertake activity which usually caused him pain.

SECTION OF MEDICINE, JUNE 22

Professor A. C. Frazer of Birmingham described the modern classification of what used to be known as *idiopathic steatorrhœa*, the passage of fluid or semi-fluid, bulky, pale, fatty and usually offensive stools. The increased volume and fluid consistency of these stools is probably due to an increase in the volume of material passed into the colon from the ileum, coupled with relatively early emptying of the large bowel. The characteristic pallor is best explained by changes in bile pigments associated with a fermentative intestinal flora.

In discussing the relationship of steatorrhœa to faulty intestinal absorption, the speaker classified such defects into pancreatic, hepatogenous and enterogenous groups.

In the first group, generalized pancreatic enzyme deficiency is the common fault associated with steatorrhœa, but deficiency of a specific enzyme can also occur, while the hepatogenous group of absorptive defects is only occasionally associated with steatorrhœa. The third or enterogenous group may be split into two parts, according to the association with, or absence of, gross irreversible pathological changes in the intestine, e.g. Whipple's syndrome or regional ileitis.

← These cartoonogenic participants in the B.M.A.-C.M.A.-O.M.A. Annual Meeting were sketched by Mr. W. B. Mac, the well-known cartoonist on the staff of the *Toronto Telegram*. We think that our readers may be interested in having this picture gallery on record.—Ed.

Cases of enterogenous steatorrhœa not thus associated have certain common features, in that all such patients exhibit depressed absorptive capacity of the upper small intestine, as shown by delay and depression of the absorption curves for glucose, xylose, fat and many other substances. Radiographic examination of the upper intestine reveals increased mucous secretion, causing clumping of a simple barium sulphate suspension; if a non-flocculable opaque medium is used, the upper intestine is found to have an abnormal mucosal pattern and is often dilated.

Professor Frazer stated that the coeliac syndrome has been conclusively shown in Holland and England to be due to the presence of wheat-gluten in the child's diet; a gluten-induced enteropathy is also found in adult patients. In tropical sprue, a similar gastrointestinal situation is observed. Evidence is accumulating that a dietary factor may be involved in this condition and related to oxidative rancidity of unsaturated fatty acids.

Steatorrhœa may also be the outstanding feature in gastro-colic or entero-colic fistula, and various types of intestinal loop. While the precise cause is not yet clear, it is possible that it may be related to the intestinal flora.

The importance of differential diagnosis was discussed by Professor Frazer. The first step, that of separating the three groups, is best done by intestinal intubation. After exclusion of the pancreatic and hepatogenous conditions, the enterogenous group requires fractionating. The diagnosis of the rare Whipple's syndrome, scleroderma and tuberculous enteritis may be reached as a result of associated changes. Regional ileitis can be distinguished from the sprue group because the upper intestinal absorptive capacity is usually normal, radiographs indicating abnormalities in the lower part of the small intestine. The anastomotic syndromes usually have a surgical history.

The three classical varieties of the sprue syndrome were next referred to. Gluten-induced enteropathy is indicated by marked improvement on a gluten-free regimen, but it is only proved by demonstrable deterioration when wheat gluten is re-introduced into the diet. In adults it may be necessary to persevere with a gluten-free diet for at least six months before accepting a negative response, and it was hoped that a quicker method of diagnosis would soon be available. Cases of non-tropical sprue not responding to a gluten-free diet must be classified as enterogenous steatorrhœa of unknown etiology—the speaker cited "non-tropical sprue" as an adequate term for this group.

Two main forms of treatment were outlined: firstly to cut down intestinal bacterial activity in general and carbohydrate fermentation in particular, and secondly to correct the intestinal absorptive fault if possible. The first of these objectives has formed the basis of treatment for many years. The diet usually recommended has a low residue, high protein and restricted carbohydrate distribution, and some authorities advise reducing fats. However, a daily fat intake of 50 g. per day, or even more, is quite well tolerated by most patients.

Cases of defective pancreatic enzymes may be improved by the administration of pancreatin. One of the best ways of doing this, especially in children, is to mix the powder in milk. In the child with deficient bile salts the oral administration of bile salts had a dramatic effect on the fat in the stools, but in long-term therapy it may be simpler to restrict the fat intake. In selected cases of regional ileitis, resection of the affected part of the small intestine may be successful, but other cases require general dietary treatment. Where a gluten-induced enteropathy exists, patients must be placed on a wheat-gluten-free diet, thus excluding many foods. Anastomotic syndromes are usually relieved by surgical treatment, and antibacterial therapy may be used preoperatively.

Professor Frazer concluded by saying that all conditions are amenable to appropriate forms of specific therapy, but a few cases remain in which the etiology is obscure and the treatment empirical.

SECTION OF MEDICINE, JUNE 23

The nature of the physiological disturbance in chronic pulmonary emphysema was described by Dr. E. C. Warner of London, who mentioned that this condition was found in 5% of all autopsies. The basic loss in emphysema was of elastic recoil of the lungs, the loss being most marked on the lung surfaces. Hence the chest remained permanently in the inspiratory position. Destruction of the elastic framework was due to: (1) age; (2) alveolar overdistension by chronic bronchitis or asthma. Expiration then required lung compression by unnatural muscular effort. The vital capacity was reduced and gas exchange was deficient, because of deficient ventilation of the so-called poorly ventilated space, whose exact location was unknown. CO₂ accumulated in blood and alveolar air, and oxygen tension fell. The bicarbonate reserve in blood increased and polycythæmia occurred. Tissue respiration was maintained by increasing heart output, with subsequent rise in pressure in the pulmonary artery.

SECTION OF NEUROLOGY, JUNE 20

Sir Geoffrey Jefferson of Manchester reviewed cases of coma due to posterior fossa lesions, a condition he first reported five years ago. In these cases, the train of events resembled that in middle meningeal hæmorrhage, with a latent period after injury, followed by hypersomnia, stupor and recovery when compression was relieved. The changes in consciousness must be due to depression of function in the brain stem, the reticular formation being probably the structure involved. Damage to this formation diminished alerting or arousal effects on the cerebral hemispheres. Stupor is rare in brain-stem compression, probably because the latter is a resistant structure and only severe compression, which soon causes death by interference with respiration, affects its functions.

According to Dr. Hugh Garland of Leeds diabetic myelopathy was described in 1890, quickly forgotten, and re-discovered in 1953, when he and Taverner described five cases in persons over 50 with relatively mild diabetes. They had weakness and wasting of leg muscles, and areflexia, always asymmetrical and sometimes almost unilateral. Sometimes, plantar responses were extensor, and the CSF had a high protein content. In all five cases, electromyographic changes were compatible with a cord lesion.

In further cases, pain was not a constant feature, though common. Myelopathy could develop in a diabetes imperfectly controlled. Dr. Garland thought that the syndrome, which was totally reversible, was often overlooked.

According to Dr. W. Ritchie Russell of Oxford, interstitial neuritis is now a neglected diagnosis,

though the clinical features are quite distinct. Sciatica cannot be satisfactorily explained by nerve pressure due to prolapsed disc. Pressure on a healthy nerve is painless, and functional conduction in sciatica is usually remarkably normal. It is generally true to say that development of a painful neuropathy indicates an abnormal state of the nerve or its sheath. Thus in sciatica there is often local tenderness and intolerance to stretching, with increased liability to blocking of conduction on compression of the limb.

In the common brachial neuritis of the busy housewife, the worst pain often occurs within an hour or two of going to bed, and appears to be a nerve sheath pain. There may be paræsthesiæ on waking, due to compression. Investigation of such cases by x-rays is often most misleading. Careful analysis of symptoms and signs is still the most informative factor in diagnosis.

SECTION OF NEUROLOGY, JUNE 22

Mr. D. W. C. Northfield of London analysed a series of 38 cases of cervical spondylosis with myelopathy, pointing out that changes in the cervical vertebræ with increasing age might be associated with both upper and motor neurone lesions, and that the diagnosis was often difficult. In producing symptoms of myelopathy, compression of the cord by intraspinal osteophytes, and ischæmia by compression of blood vessels both play a part. In the series under discussion symptoms had been present for from six weeks to 20 years, and patients were between 30 and 70 years of age.

Disturbance of function of the cervical spine was insignificant. The commonest first symptom was weakness or stiffness of one or both legs; numbness or paræsthesiæ in arms, weakness or clumsiness of arms, pain in arms, leg cramps or paræsthesiæ were less common. In the arms, weakness, wasting, flaccidity or spasticity, and increase or decrease of tendon reflexes occurred in all but two cases. In the legs there was some spastic weakness in 27 cases. In most cases there was some sensory disturbance, sometimes difficult to detect. Disturbances of micturition might occur but were difficult to assess.

Diagnosis was based on radiographic findings, including myelography. Osteophytes might be well localized or widely distributed.

The 38 patients were treated by laminectomy, which in some cases had to be extensive. In three cases spinal fusion was also carried out. In 12 cases improvement was considerable, in nine slight; in seven cases there was no change, in five the condition got slowly worse, and five patients died, either from the operation or other disease.

Dr. Douglas McAlpine of London, made some *observations on diagnosis and treatment of multiple sclerosis*. About the diagnosis, he made two important points. First, multiple symptoms and signs need not be present at the onset; in 63% of a series of 309 cases, only one symptom was noted at the beginning. He also stressed that early symptoms may be transitory, blurring of vision maybe lasting only for hours or minutes. Secondly, pyramidal signs were not necessarily elicited; plaques might be only in the optic nerve or the posterior columns. The commonest early symptoms and signs in order of descending frequency were: retrobulbar neuritis; paræsthesiæ, motor weakness, diplopia and vertigo or vomiting. Precipitating factors in onset or relapse included poor general health, infection, trauma and emotional upset. Nystagmus was an important early sign of brain-stem invasion.

Careful history-taking was of paramount importance; when in doubt, the CSF must be examined.

Treatment was influenced by the fact that sufferers from multiple sclerosis were now known to live much longer than had been thought, and by the allergic theory.

SECTION OF OBSTETRICS AND GYNÆCOLOGY, JUNE 21

Mr. S. Bender of Liverpool explained that, because the question of *fertility after tubal pregnancy* had received so little attention, a study had been made in the Liverpool area of 304 women operated on for this condition between 1946 and 1952. At follow-up 263 were traced, and the subsequent conception rate was found to be 43.7%. However, only one-third of the women who had been operated on for tubal pregnancy produced a live child. In 16% of those who had conceived again, a second ectopic pregnancy had occurred; this is 50 times the general incidence. As might be expected, women under 30 conceived more readily after ectopic pregnancy than did older women. Curiously enough, there was a higher incidence of pregnancy after salpingo-oophorectomy (56%) than after salpingectomy (42%). At operation, Mr. Bender emphasized that before dealing with the affected tube its fellow should be inspected; if the latter were damaged, salpingostomy on the pregnant tube was preferable to salpingectomy. In order to give a further chance of pregnancy, a thorough peritoneal toilet should be performed, with postoperative chemotherapy and early salpingography.

SECTION OF OBSTETRICS AND GYNÆCOLOGY, JUNE 23

In his address on *early diagnosis of cancer of the cervix uteri*, Mr. Malcolm Donaldson of London reaffirmed his belief in the value of such early diagnosis. He discussed diagnosis under two heads: (1) the problem of getting patients with irregular vaginal bleeding to seek advice at the earliest possible moment; (2) the actual diagnosis of the condition. He considered that the delay in seeking treatment materially altered the prognosis, though there were few figures published on correlation between delay and the stage of the disease, or on the relation of delay to five-year survival. The exact value of cancer educa-

tion in reducing delay is still undetermined. Periodical examinations in cancer detection are an impractical ideal.

In diagnosis, history and thorough clinical examination are of paramount importance.

SECTION OF ORTHOPÆDIC SURGERY, JUNE 23

Mr. J. P. Campbell of Nottingham made out a good case for *treatment of osteoarthritis of the hip by osteotomy and internal fixation*, stating that this is a simple and effective method and can be relied on to give a stable and painless joint in a high proportion of cases. After describing the technique of operation, he reviewed results in 34 cases, in half of which the patients were over 60 years old. In this series 21 patients were now completely free of pain, and nine had occasional pain. The four failures were due to technical faults early in the series. Although gain in movement was not an object of the operation, the range in 20 hips was greater postoperatively. Mr. Campbell described studies made in the engineering department of the University of Nottingham to determine the cause of success of this operation. From these, it appeared that osteotomy permitted the pelvis to assume a horizontal position, thus relieving the outward thrust on the femoral head.

SECTION OF OTOLARYNGOLOGY, JUNE 22

In 1949, Mr. R. C. Macbeth of Oxford had described a method of *treating œsophageal varices in portal hypertension by sclerosing injections*. In his present communication, he discussed experience in a total of 30 cases. He outlined the pathology of portal hypertension and the anatomy of the œsophageal veins. In many cases, hæmatemesis from œsophageal varices was the only symptom, and treatment of these varices might prolong life in patients with liver damage, or give lasting relief where the liver was still intact.

Of the 30 cases treated by Mr. Macbeth, 14 had signs of liver damage. Patients were given injections of 3-4 c.c. of 5% sodium morrhuate into each varicosity, as many as six such injections being given at a session, under general anaesthesia with the aid of the largest Negus œsophagoscope possible. Any bleeding after injection can be controlled by a hydrostatic bag, and treatment can be repeated every 1-3 weeks until all veins have been injected. Oesophagoscopy must then take place three months later, after a further six months, and at least once a year subsequently.

Although results were disappointing in cases of severe liver damage, they were very gratifying in those with an intact liver.

GENERAL PRACTICE

COLLEGE OF GENERAL
PRACTICE OF CANADA*Committee on Education*

ALL COMMITTEES submitted very helpful reports to the Board of Representatives at its recent June meeting. The Committee on Education (Chairman—Dr. E. C. McCoy) dealt with the following matters which are of much importance to the College.

Postgraduate Training and Assessment of Credits

It was agreed that the maximum credit for any course would be hour for hour. It could be less than this, but should never be more.

Formal training, as outlined now, involves a minimum of 25 hours at a formal refresher course and 25 hours of attendance at provincial or Dominion medical association meetings. It was felt that this requirement should be changed and might well read that there would still be a total of 50 hours with a minimum of 25 hours for formal postgraduate courses and a minimum of 10 hours at provincial or Dominion meetings. In other words, a man could put in 40 hours at formal courses and 10 hours at provincial and Dominion meetings and still fulfil his 50 hours. Of the two types of training it was felt that the formal training was probably the more beneficial. At the same time, it is desired to encourage attendance at the scientific sessions of provincial and Dominion medical association meetings. A maximum of 25 hours' credits at these is considered sufficient.

It was felt that it would be satisfactory if a doctor had all of the 100 hours of his training in formal credits. Doctors should be encouraged to leave their home town or city for at least a part of their formal training.

A list of postgraduate courses at present available, including the number of hours in each course, in the various provinces of Canada, should be prepared. The provincial corresponding members of this committee are being asked to submit a list of such courses in their provinces so that an overall list can be made. This list will include courses in the adjoining States of the United States.

The Central Committee on Education was empowered to act as the official committee for standardization of postgraduate courses for the College.

Much thought was given to trying to assist the rural doctor to make up his hours of credits.

It was felt that this was much easier for the city doctor. Attendance at courses of travelling teams of medical instructors will count as credits for formal training.

For men in isolated areas reading courses were considered and it was decided to explore the development of reading courses with examinations at the end and hours of credit allotted. This would probably best be arranged by a Director of Education. The Board of Representatives by resolution agreed to engage a full-time Director of Education as soon as funds could be obtained.

A postgraduate education questionnaire was submitted, and will be mailed to all members of the College in the near future. It is hoped to learn from this questionnaire what type of medical instruction members desire and need.

Special credit allowed: (a) Five hours for a scientific paper published in a local or provincial medical bulletin or journal. (b) Ten hours' credit for a paper published in a medical journal with a national distribution. (c) Five hours' credit for a scientific lecture before a medical audience or radio broadcast on a national basis. (d) Audio-Digest is approved for informal credits.

Postgraduate Medical Study Card

A combination of membership and record study card was agreed upon. This copies rather closely that used by the American Academy of General Practice.

Preceptorship Training for General Practice

The committee felt that the weakness in present training for general practice starts at the undergraduate training level, where all contact is with specialists and no contact is made with general practitioners. This holds in nearly all medical schools. It was agreed that preceptorship training should be the backbone of contact with general practitioners and should be obligatory in the final year of undergraduate training. By resolution the Board of Representatives recommends that a preceptorship with an experienced general physician of two weeks in the final year of undergraduate study be made obligatory as a part of the medical curriculum.

How might this be accomplished? The College might well make representation to the Association of Canadian Medical Colleges to find out what general practice teaching they advise, because doing this in the odd school here and there is not sufficient. It should be much more widespread, and direct representation and discussion with the Association might help to accomplish this.

Representation to faculty councils of medical schools might be worth while in an attempt to get proper allotment of time for such things as preceptorships, as at that level each department is striving to get hours for its own teaching and nobody represents the general practitioner. Certainly there has to be a fair allotment of

hours during the final year if adequate preceptorship training is to be carried out. This training should be compulsory. If compulsory, it will necessarily run throughout the year.

Canadian Medical Directory

The Board of Representatives approved the following motion:

Whereas there are at present two directories, a Directory of the College of General Practice and a Canadian Medical Directory, and

Whereas it is of some interest and advantage to identify the members of the College and the type of work done by them,

Therefore, be it resolved that a Directory Committee of two with the Executive Director be appointed by the Chairman to study the listings in these two directories and make the necessary annotations to convey the desired information.

WYETH POSTGRADUATE EDUCATION FUND



JOHN WYETH & BROTHER (Canada) Ltd. has made \$7,500 available to the College of General Practice of Canada for the development of its programme of postgraduate training for general practitioners.

This money is to be used for: (a) payment of speakers at postgraduate courses in any province, as approved by the College of General Practice; (b) payment of recognized medical instructors in travelling teams to any group of doctors, as approved by the College of General Practice.

The Board of Representatives of the College at its recent June meeting directed that up to \$2,000 of this sum be made available to the Postgraduate Committee of Dalhousie University, because their programme of postgraduate education covers the terms of the grant and embraces the four Atlantic provinces. This money is to be used in consultation with the chapters of the College of General Practice of these provinces. The Board of Representatives further resolved that other chapters make known their needs as soon as possible, so that this grant be utilized during the current year.

This is the first expenditure authorized from this gift. It is hoped that our members throughout the Dominion will take advantage of this fine offer of assistance for developing refresher courses and programmes by travelling teams.

Although the donors have not asked for any recognition of this gift, we ask that the relevant programmes carry words to the effect that "this contribution to our programme is made possible by the Wyeth Postgraduate Education Fund."

MEDICAL SOCIETIES

WORLD MEDICAL ASSOCIATION SECRETARIES' CONFERENCE

The Secretary-General of the World Medical Association, Dr. Louis H. Bauer, took advantage of the presence of many secretaries of national medical associations at the Commonwealth Conference to call together a meeting of secretaries at the W.M.A. headquarters, 345 East 46th Street, New York 17. Most of the national association officials who had participated in the Commonwealth Conference and later in the conjoint B.M.A.—C.M.A. meeting responded to his invitation, and met with Dr. George Lull (Secretary), Dr. Austin Smith (Editor) and Dr. E. B. Howard (Assistant Secretary) of the American Medical Association in a profitable two-day conference on June 27 and 28. Drs. A. F. W. Peart and S. S. B. Gilder represented the Canadian Medical Association.

Visitors were first taken on a tour of the premises, and then Dr. Bauer and his executive assistant, Miss Margaret L. Natwick, outlined the organization and work of the W. M. A. Dr. Bauer explained that the programme of the Association is still handicapped by financial stringency, although the U.S. Supporting Committee pays the expenses of the secretariat and of publication of the bimonthly journal, the *World Medical Journal*. It is proposed to raise the annual subscription from national medical associations gradually to one Swiss franc (23 cents) per member by 1958. Some associations are already voluntarily contributing at this level.

The current W.M.A. programme, which is mainly concerned with organizational problems, was outlined. A code of "international medical law," or rather international medical ethics, is under study by a committee which will meet again in the fall. There is need for such study in view of the appearance of such problems as the doctor's role in human experimentation and in atomic research. It is proposed eventually to create a central international repository for medical credentials, in which copies of medical diplomas might be stored for reference in case of loss of such credentials by their holders. This difficulty has already frequently arisen in connection with migration of Central European physicians. International occupational health services are also under study; although W.H.O. and I.L.O. are already in this field, W.M.A. thinks that there is much scope for work by such a non-governmental medical body as itself. Planning has already begun for the Second World Conference on Medical Education to be held in Chicago in 1959.

Certain national organizations have undertaken specific projects in co-operation with the W.M.A. For example, the Swedish Medical Association is organizing a library on social security.

In discussion of future activities of W.M.A., many helpful suggestions were forthcoming from participants round the table for extending the scope of the work. All agreed that there was a need for such a body to speak for physicians at the international level, and even one or two sceptics proclaimed themselves converted and stated that their former indifference to W.M.A. was due to their ignorance of its functions, and some confusion between the roles of W.M.A. and W.H.O. The latter is of course a governmental body, and has very little relationship to organized medicine.

CORRESPONDENCE

POLIOMYELITIS VIRUS

To the Editor:

It is probably unnecessary to point out that the rejection of Dr. Evans's point regarding the lack of efficacy of dead virus vaccine (*Canad. M. A. J.*, 72: 863, 1955) by a "well-known authority" does not nullify that point. Had Dr. Evans considered it necessary to support his statement with evidence, he doubtless would have done so. The writer is not an authority, nor has he even kept up with the literature in the last 15 years, but it is common knowledge, or should be, that long before that live virus was recovered from, and rabies produced with, phenol-treated rabies vaccine that had passed all the prescribed tests for safety and was considered to be dead. The late Sir John Ledingham, then Director of the Lister Institute and a recognized authority of worldwide repute with the experience of a life-time in this field, was highly sceptical of the value of any dead virus, including that of rabies. Our knowledge of influenza-disease, infection, vaccine, immunity—is so slight that it is surprising that the evidence for its dead virus inducing protection would be considered "excellent." A Saskatchewan physician well acquainted with the situation has stated very recently that vaccine for equine encephalitis has not proved reliable; thus there would seem to be reason to doubt the evidence for dead virus inducing protection in that infection. Although some authorities once thought otherwise, dead vaccinia virus has failed entirely to induce protection. Effective louping-ill vaccine, though often supposed to be dead, contains live virus. Dead virus did not induce protection against yellow fever; nor was it acceptable in dog distemper. Any authority could list other similar examples. For a few days, and in spite of some slight incongruities lacking a completely satisfactory explanation, it looked as if it could be safely inferred from the superb analysis of Dr. Francis that dead poliomyelitis vaccine could give protection, though not of the 10:1 order afforded by diphtheria toxoid; but the subsequent experience should at least suggest the need for further consideration. As Dr. Evans pointed out, the presence of demonstrable antibody, even neutralizing antibody, does not necessarily mean protection. Macleod¹ has shown that even good protection in the laboratory animal against parenteral challenge (*in Typhi murium* infection in mice) does not necessarily indicate protection against natural infection; this fundamental finding may well be of high significance in the polio problem. At the moment we only know that poliomyelitis virus can be killed so that it will not produce poliomyelitis, but we do not know with certainty that virus so killed will induce protection in the child even though it may induce antibodies. As implied by Dr. Evans, there are many possibilities to be seriously considered.

The profession is indebted to Dr. Evans for bringing into the open some of the possible hazards and limitations of the poliomyelitis vaccine in the face of the wide publicity that failed to mention them.

N. E. MCKINNON, M.B.

Department of Epidemiology,
School of Hygiene,
University of Toronto,
June 20, 1955.

REFERENCE

1. *J. Hyg.*, 52: 9, 1954.

EPILEPTICS

To the Editor:

Dr. Roland W. Radcliffe's quite excellent article on "The Social Problems of Epileptics with Special Reference to Canada" (*Canad. M. A. J.*, 72: 647, 1955) has given me a great deal of pleasure but a certain minor puzzlement too. I cannot quite make out how, if "epileptics are a group of people who make up about 1% of the population of all countries" as Dr. Radcliffe states, there are 11,000 epileptics in Canada of whom approximately 7,500 are now out of hospital, especially as there are reported to be 500,000 epileptics in the United States. Since the population of the United States is roughly ten times that of Canada, either being a Canadian exercises some extraordinary protection, which, if true, must surely be quickly investigated, or the diagnostic facilities in Canada are unsatisfactory. There is, of course, the further possibility that Dr. Radcliffe has left out an 0. There are in fact about 111,000 epileptics in Canada. But if this is so, then only about 3% of these epileptics are in mental hospitals. This would certainly fit in with my observations better than his figure of 10%.

I think that the importance of this is that epileptics are a large section of the population and require our thought and help. I feel that he should have touched on the relationship between epilepsy and crime. It is an important one, and one which always results in the most unfortunate publicity for epileptics. It does seem true that a very, very small proportion of them do have violent and impulsive outbursts. I think it would be only wise to show that this small proportion of people do much less damage than drunken car drivers.

I hope this does not seem to be niggling at an excellent article, but it seemed to me excellent enough to call for some explanation of these really rather peculiar figures.

HUMPHRY OSMOND, M.D.

The Saskatchewan Hospital,
Weyburn, Sask.,
May 19, 1955.

Dr. Radcliffe's comments on Dr. Osmond's letter are printed below:

Dr. Osmond is quite right. There is an 0 missing from the figures in my paper. I have stated that 1% of the population of all countries are epileptics, and when this is applied to Canada 11,000 is obviously incorrect. Indeed in Canada there are slightly less than 1%. Of this group, a minimum of 75,000 are out of hospital and have to make their own living. The percentage in hospital differs in various countries, but 10% is an absolute maximum and in Canada it is less than this; as Dr. Osmond states. I was bringing out the point that even assuming this maximum number of institutionalized epileptics there is still a very large group who must provide for themselves.

R. W. RADCLIFFE, M.A., M.D.

University of British Columbia,
Vancouver, Canada,
June 6, 1955.

PUBLIC HEALTH BURSARIES

Bursaries to help finance special short-course training in child and maternal health have been awarded Dr. J. D. Stephen, pathologist, and Miss M. Lipsett, laboratory technician, of the Regina General Hospital. Dr. Stephen's month-long study at the Children's Medical Center, Boston, will be a more intensive and competent study of the causes of death in infants. Miss Lipsett will observe methods in testing for Rh and other blood groups of mothers and children, to provide safer transfusion service.

ABSTRACTS from current literature

MEDICINE

Body Position in Relation to Venous Air Embolism.

DURANT, T. M. *et al.*: AM. J. M. SC., 227: 509, 1954.

Biplane stereoscopic angiocardiology was used to study the basic pathophysiology of venous air embolism. Air injected into the femoral vein in amounts approximating the average lethal dose appeared almost immediately within the roentgen shadow of the heart and pulmonary artery. The presence of air in the latter structure correlated well with the presence of systemic hypotension and respiratory arrhythmia, but not with any significant blood chemical alteration. In the left-side-down position the amount of air in the pulmonary artery either fluctuated or progressively decreased in animals which recovered, and was generally reciprocally related to the amount of air in the right atrium and ventricle. In the latter chambers, the air was trapped away from the out-flow tract of the right ventricle, so that continuity of blood column from the cavæ to the pulmonary artery was maintained. This evidently permitted circulation to continue until the air could be eliminated from the right heart by contraction or by inspiratory aspiration or both. By contrast, the supine position resulted in a very unfavourable situation, the blood column in the right heart being interrupted by an obstructing air trap located between the cavæ and the pulmonary artery. These studies thus confirm the importance of the left-side-down position in aiding recovery from venous air embolism.

A case of venous air embolism associated with accidental aspiration of air during angiocardiology is reported, together with roentgenograms demonstrating an air trap in the pulmonary artery. S. J. SHANE

The Liver in Ferrous Sulphate Poisoning: A Report of Three Fatal Cases in Children and an Experimental Study.

LUONGO, M. A. AND BJORNSEN, S. S.: NEW ENGLAND J. MED., 251: 995, 1954.

Three fatalities are reported in children following the ingestion of ferrous sulphate prescribed for the mothers. Death occurred rapidly in all cases. In each case, as well as in experimental work subsequently done on rabbits, the outstanding autopsy finding was a hæmorrhagic periportal necrosis of the liver.

The danger of acute poisoning in children from the ingestion of ferrous sulphate should be generally recognized and guarded against, especially since it is frequently dispensed in a chocolate-coated form.

NORMAN S. SKINNER

Phæochromocytoma: A Study of Fifteen Cases Diagnosed at Autopsy.

MINNO, A. M., BENNETT, W. A. AND KVALE, W. F.: NEW ENGLAND J. MED., 251: 959, 1954.

Of 15,984 consecutive autopsies performed at the Mayo Clinic from 1928 to 1951 inclusive, phæochromocytoma was found in 15. Only three had been suspected before death. In three cases the tumour had apparently been asymptomatic. Hypertension had been present in the remaining 12, persistent in 10 and paroxysmal in two. Nephrosclerosis was present in six of the 15 cases and was malignant in one. Ten of the 15 had cardiac hypertrophy.

Shock after incidental operations caused death in five of the group, suggesting that surgery is highly dangerous in the presence of a phæochromocytoma. Neurofibromatosis was present in one case, the eleventh recorded instance of the association of the two conditions.

NORMAN S. SKINNER

Shoulder Dysfunction in Pulmonary Tuberculosis.

FRANKLIN, E. C. AND NEMCIK, F. J.: AM. J. M. SC., 227: 601, 1954.

Any condition which necessitates prolonged immobilization of the shoulder and arm is frequently accompanied by pain and stiffness in the shoulder—the frozen shoulder. The authors had found that a number of patients attending a physical medicine unit for pain and stiffness of the shoulder had been hospitalized primarily for pulmonary tuberculosis; they therefore made a survey of the frequency of shoulder disorders in such patients. First they evaluated all the factors relating to the shoulders in all patients hospitalized in three randomly selected wards for pulmonary tuberculosis; patients who had undergone any thoracic surgery or who had any condition such as arthritis or injury to the arm were excluded. In the initial survey of 199 patients severe shoulder disability was rare in patients under the age of 40; the study was extended to include almost all the tuberculous patients (260) over that age.

The authors classified cases as Grade 0 with no shoulder disability, Grade I with pain and subjective complaints of stiffness but no limitation of shoulder movement, Grade II with ability to abduct the arm more than 90 degrees but less than 180, and Grade III with inability to abduct the arm more than 90 degrees. Of 136 patients under the age of 40, 85.2% were in Grade 0, 13.2% in Grade I and only 1.6% in Grade II; on the other hand, among 124 patients over 40 years, 16.9% were in Grade I and 24.2% in Grade II or III. All patients developed their first shoulder symptoms while at complete or almost complete bed rest; of those with shoulder dysfunction 84.5% developed symptoms within six months of their confinement to bed, 8.5% between seven and twelve months, and only 7% after a year. There was no apparent correlation between the duration of tuberculosis and the development of shoulder symptoms; there was no significant effect from the use of drugs and no correlation between the location of the tuberculous process in the lungs and the site of the shoulder complaint.

A few patients, usually those most seriously incapacitated by the shoulder lesion, received analgesics with an active programme of shoulder exercises supplemented by heat and massage; only a small number noted significant improvement. Of the patients who received no physical therapy, symptoms improved or disappeared in a few, the improvement frequently coinciding with an increase in the patient's activities and being most common in patients with Grade I disability.

Of the numerous causes for shoulder pain only three could be considered in the authors' group of cases: (1) visceral referred pain from diaphragmatic or pleural irritation; (2) prolonged immobilization of the arm; (3) degenerative lesions of the rotator cuff. Because the side of the shoulder disability frequently did not correspond to the side of the lung lesion, and since shoulder pain frequently occurred in the absence of pleural or diaphragmatic, it was thought that factors of visceral or referred pain were of less importance than prolonged immobilization and degenerative changes in the rotator cuff. In the treatment of pulmonary tuberculosis the patient is continually being reminded of the importance of rest, and many patients are reluctant to move their arms for fear of aggravating their disease. In all patients the symptoms appeared at a time when they were confined to bed. Degenerative lesions of the shoulder cuff are usually more severe in older patients; this probably accounts for the greater incidence of shoulder dysfunction over the age of 40.

Every effort should be made to prevent the appearance of shoulder disability by active shoulder exercises for all patients over 40 in hospital for tuberculosis.

W. F. T. TATLOW

*Acquired Agammaglobulinaemia:
Report of Three Cases.*ZINNEMAN, H. H., HALL, W. H. AND HELLER,
B. I.: J. A. M. A., 156: 1390, 1954.

Agammaglobulinaemia is characterized by normal blood protein fractions with the sole exception of gamma globulin, which may be completely absent or present in amounts demonstrable only by immunochemical methods. It appears that there are two types of the disease, one idiopathic and probably congenital, the other acquired or secondary to a disease of the lymphatic or reticuloendothelial systems.

The condition described in this paper was observed in two men and one woman who had had a normal childhood, but had recurrent respiratory infections, including pneumonia, bronchiectasis and pneumococcal meningitis during early adult life. In two of these patients the cause of the disease was unknown, while in the third it appeared to be secondary to sarcoidosis. Biopsies of the liver, spleen and lymph nodes of one patient showed complete absence of plasma cells, generally thought to be the source of gamma globulin. Replacement therapy with pooled gamma globulin was disappointing, failing to protect one patient from recurrences of pneumonia, but antibiotic therapy was followed by prompt clinical response.

It appears that, in these cases, continuous treatment with antibiotics is the most effective means of preventing recurrent infections. S. J. SHANE

Hypertensive Retinopathy and its Medical Treatment.

PLATT, R.: QUART. J. MED., 23: 441, 1954.

The retinal changes of hypertension are discussed and illustrated by reproductions of photographs of the fundi which are noteworthy. Adequate medical treatment of patients with hypertensive retinopathy with hypotensive drugs will usually bring about a marked improvement with restoration of vision, provided therapy is started before the onset of marked renal or cardiac failure.

Of a group of 35 patients with hypertensive retinopathy treated by the author eight discontinued the recommended regimen; ten died (three showing great visual improvement before death); in twelve the retinal abnormality cleared or improved greatly; definite improvement was evident in two cases, and the remaining three patients have not been followed up long enough for assessment.

The therapeutic hypotensive agent originally employed was hexamethonium bromide. This has been replaced by Ansolysen (pentapyrrolidinium bitartrate). All patients are admitted to hospital for an approximate period of three weeks for study and regulation of drug dosage.

NORMAN S. SKINNER

Painless Myocardial Infarction: A Review of the Literature and Analysis of 220 Cases.

ROSEMAN, M. D.: ANN. INT. MED., 41: 1, 1954.

In an attempt to re-investigate the problem of painless myocardial infarction, the available literature on the subject was reviewed and a series of 220 cases was examined from the records of the Boston City Hospital. Only cases in which unequivocal diagnosis of myocardial infarction could be made either by necropsy or serial electrocardiograms were included. The ages in this group ranged from 37 to 87 years. There were only 10 (4.5%) patients with painless infarcts. Of these, only 5 (2.3%) had reliable histories. In the other 5, the absence of complaint of pain was considered to be due to a clouded sensorium.

The commonest symptom in painless myocardial infarction is dyspnoea. In all cases in which pain was not complained of, there were various "substitution symptoms." These included retrosternal paræsthesia, "oppressive sensations," retrosternal "tightness," "feelings of pressure," "choking sensations" and "vague discomfort." Several explanations of the absence of pain are discussed. One is that pain may be absent because the subject is hyposensitive to pain. Another is that the infarction occurs so slowly, with only a few fibres injured at a time, that the resulting sensation is insufficient to reach the sensorium and produce the sensation of pain. It is also suggested that gradual, progressive narrowing of the coronary arteries may result in an area that has become relatively anesthetized by destruction of vessels, nerves and functioning muscles, so that a painful response to the new occlusion may be lacking.

It is concluded that painless myocardial infarction does occur but that, contrary to earlier studies on the subject, the incidence is extremely low. S. J. SHANE

Ischæmic Sensory Loss in Patients with Peripheral Nerve Lesions.

GILLIATT, R. W. AND WILSON, T. G.: J. NEUROL., NEUROSURG. & PSYCHIAT., 17: 104, 1954.

The authors had found that, in patients with painful paræsthesia due to median nerve compression at the wrist, symptoms were precipitated if the circulation to the affected arm was arrested by inflation of a pneumatic cuff. They had previously found that arrest of the circulation to the arm could result in a rapid onset of numbness where none had been present previously. In this paper they compare the effects of sudden circulatory arrest on the sensory loss of patients with peripheral nerve and root lesions affecting the hand with effects in normal subjects. Thirty patients suffering from median nerve compression at the wrist, four with ulnar nerve lesions, one with a radial nerve lesion, two with cervical rib syndromes and two with numbness in the hand due to cervical disc lesions were compared with 50 normal controls. Nerve ischæmia was induced by a pneumatic cuff inflated to above arterial pressure, above the elbow in most cases.

In normal subjects ischæmic paræsthesia were reported within a few minutes, but as these subsided sensation appeared to return to normal; 10-15 minutes after the onset of ischæmia patients reported subjective numbness usually, but not invariably, spreading from the radial to the ulnar border. Of the 30 patients with median nerve compression at the wrist, 20 had some subjective numbness beforehand but it involved the whole median distribution in six cases only. With ischæmia any sensory loss became much more obvious and in 14 patients with partial median nerve involvement numbness spread within a few minutes to the remaining fingers supplied by the nerve, the ulnar territory remaining normal. In 10 patients without subjective numbness of the hands, ischæmia caused it to appear in a median distribution in seven; in only three of the 30 patients did a median distribution of numbness fail to occur at all during ischæmia. The authors show from their observations that in 28 cases the time for numbness ranged from zero to 12 minutes, but that in 26 cases the numbness was present within 10 minutes. The test is useful in obscure cases of acroparæsthesia.

In all four patients with mild ulnar nerve lesions due to pressure at the elbow early ischæmic sensory loss occurred. The effect of ischæmia was not directly on the damaged nerve fibres, because in two patients results of cuff inflation around the forearm were similar to the effects of arterial occlusion above the elbow. In disc lesions with sensory changes, the authors produce some confirmatory evidence that the effect of ischæmia de-

pendent upon the additive effect of two quite separate regions of depressed function along the nerve, one at the site of the initial lesion and the other in the peripheral segment of nerve artificially deprived of its supply of blood. They recommend use of a pneumatic cuff to confirm the presence of minimal sensory loss. The appearance of sensory loss due to ischaemia is considered to be evidence for a pre-existing lesion of the ulnar nerve if the loss is restricted to the ulnar border. Any well-marked median sensory change occurring within the first 10 minutes is suggestive of median nerve damage, whilst change occurring within five to six minutes is definitely indicative of this. When using ischaemia in the examination of peripheral nerve lesions, it is possible to test sensation very simply with a massive stimulus such as the examiner's finger.

W. F. T. TATLOW

SURGERY

Caudal Pancreatico-jejunostomy for Chronic Relapsing Pancreatitis.

DUVAL, M. K., JR.: ANN. SURG., 140: 775, 1954.

The many suggestions, theories, and treatments for chronic pancreatitis that followed Opie's publication 50 years ago are discussed. It is concluded that there are many causes of pancreatitis but that most cases are basically due to obstruction of the pancreatic duct. There is no argument against resection of a diseased gall-bladder and drainage of the biliary tree as a first attack on this benign, but crippling disease, but this and other procedures such as splachnectomy, vagotomy, gastric resection, pancreatotomy, choledochojejunostomy and sphincterotomy have not given a high proportion of satisfactory relief. Pancreatic obstruction may be relieved by creating a fistula from the pancreatic duct to the gastrointestinal tract. This is most easily accomplished by resection of the tail of the pancreas and Roux-Y anastomosis of the cut end to the jejunum behind the colon.

Cases of chronic relapsing pancreatitis were treated which showed: (1) elevation of serum amylase during an acute exacerbation; (2) abnormal undigested faecal fat; and (3) diminished duodenal amylase, lipase, and bicarbonate after secretin and Urecholine. At operation the pancreatic duct must be dilated. Radiographs after injection of Diodrast must show obstruction of flow into the duodenum, and secretin stimulation must raise the intraductal pressure.

Two cases in which these conditions were fulfilled and operation was undertaken with relief of severe symptoms are described.

BURNS PLEWES

Rigid Valgus Foot Due to Talocalcaneal Bridge.

HARRIS, R. I.: J. BONE & JOINT SURG., 37A: 169, 1955.

New light was thrown on the condition known as "peroneal spastic flat foot" or rigid valgus foot by Harris and Beath in 1948, who showed conclusively that this condition resulted from well-defined anomalies of the tarsus. There are two common abnormalities, calcaneonavicular bar as reported by Slomann in 1921 and Badgley in 1927 and talocalcaneal bridge as reported by these authors.

The talocalcaneal bridge is a congenital bond between talus and calcaneus on the medial surface and it varies from a solid bar to an incomplete bridge or lip. Radiological demonstration of this abnormality may be difficult, and the authors deal in detail with clinical and x-ray findings which should make one suspicious of

the disturbance. In a typical case there is deformity and restriction of subtalar movement. The deformity varies from a mild valgus tilt of the heel to marked depression of the longitudinal arch. Restriction of subtalar movement is the most characteristic and constant finding. This is tested best by grasping the heel and keeping the foot at right angles to the leg to avoid movement of the talus in the ankle mortise.

The correct method of demonstrating the talocalcaneal bar radiologically is by means of a beam from behind projected downward and forward at an angle of 45 degrees. The anomaly when present obscures the joint between sustentaculum and the talus. Changes in the rest of the tarsus, such as osteoarthritic lipping of the superior margin of the head of the talus, occur in most cases and are particularly significant when no bony bridge from talus to calcaneus can be seen. A group of ten such cases have been operated upon and in nine of these a bony block attached to the posterior aspect of the sustentaculum could be demonstrated. The block was exposed from the medial side and appeared as a bony mass impinging on the medial side of the body of the talus as the foot was inverted. In four other cases of typical rigid valgus foot the bone obstruction consisted of a spur projecting from the medial side of the os calcis down across the subastragloid joint like a secondary medial malleolus.

Further conclusive proof is presented in this paper that so-called peroneal spastic flat foot is largely due to congenital anomalies. It is significant that the condition is relieved by excision of the abnormality and subtalar fusion.

JAMES E. BATEMAN

Treatment of Perforated Gastroduodenal Ulcer and its Immediate Results.

QUAST, W. H. A.: SURG., GYNEC. & OBST., 100: 303, 1955.

The treatment of choice for perforated gastroduodenal ulcers, at the University Clinic of Groningen, is primary gastric resection. From 1938 to 1954, 344 cases were admitted. Treatment was by one of three methods: namely, non-operative, suture of the perforation only, or primary resection. Total mortality was 15.7%.

The non-operative method is condemned, because operation gives better results and because of the uncertainty of diagnosis, as well as the increased demands of non-surgical treatment on the hospital staff. In this group non-operative treatment was justifiable only if the perforation was considered sealed.

The method of suture is confined to cases not suitable for resection. The operation combines the advantages of brevity with a direct attack on the lesion, but it does not treat the cause. The mortality rate in this group is high because it includes all the unfavourable cases. Before 1947 it was 37.1%, and since that time—and the introduction of antibiotics—the mortality is down to 8.7%.

Primary resection, usually by the Polya B2 method, showed good results. Reoperation, often necessary after suture of a perforation, is avoided. Modern operative aids have greatly reduced the risk and error in diagnosis, and many complications are eliminated. The mortality rate was 6.1% before 1947 and has been 1.1% since. Resection is done if the patient is in good general condition and the local abdominal condition permits. Careful preoperative and postoperative routines are followed. Patients below 60 who have not gone beyond 12 hours since perforation are a much better risk. The surgeon should of course be skilled in gastric procedures.

Diagnostic points stressed are the past history, and the radiographic finding of subdiaphragmatic air. Of interest and importance is the fact that the average time between perforation and admission of the patient to hospital was just seven hours.

ALLAN D. POLLOCK

OBSTETRICS AND GYNÆCOLOGY

The Use of Chlorpromazine in the Obstetric Patient.

BENARON, H. B. W., et al.: AM. J. OBST. & GYNEC., 69: 776 and 780, 1955.

Chlorpromazine appears to be effective in the treatment of nausea and vomiting of pregnancy and hyperemesis gravidarum, and of nausea and vomiting in all three stages of labour. Blood pressure is reduced by an average of 10 mm. Hg but the side-effects of the drug are not usually serious enough to require discontinuance. It is effective both orally and intramuscularly; severe cases respond best to intramuscular administration. It appears to potentiate analgesics, reducing doses by approximately one-half. It produces in many patients during labour a quiet acceptance of pain. No harmful effects of the drug on mother or child were observed.

ROSS MITCHELL

Diabetes and Pregnancy.

DECOSTA, E. J.: OBST. & GYNEC., 5: 401, 1955.

After reviewing various methods of treatment, the author concludes that the success obtained by Priscilla White and the advocates of intensive hormonal injections will soon be shown to be due to excellent medical and obstetric care rather than to any merit in the hormones. He emphasizes the importance of the following: (1) careful diabetic management; (2) conscientious prenatal care; (3) correct timing of delivery; (4) competent neonatal care. These four "C's" should ensure a 90% fetal survival.

ROSS MITCHELL

Cytology of Early Squamous-cell Carcinoma of the Cervix.

MACKENZIE, L. L.: AM. J. OBST. & GYNEC., 69: 629, 1955.

The cytological pattern of early squamous-cell carcinoma of the cervix is divided into three distinct types. No single cell or cellular pattern is diagnostic of early squamous-cell carcinoma of the cervix, which cannot be differentiated from invasive cancer by cytological means.

ROSS MITCHELL

Rupture of the Marginal Sinus of the Placenta.

FERGUSON, J. H.: AM. J. OBST. & GYNEC., 69: 995, 1955.

Rupture of the marginal sinus was the most common cause of antepartum bleeding during a six-month period that included 2,251 deliveries. Abruptio and placenta prævia were less frequent causes of hæmorrhage. The anatomy of the marginal sinus and some characteristics of its rupture are described. Many cases of rupture of the marginal sinus have been misdiagnosed as abruptio; there is a need to differentiate these two conditions.

ROSS MITCHELL

DERMATOLOGY

Epidemiologic Study of North American Blastomycosis.

SCHWARZ, J. AND GOLDMAN, L.: A. M. A. ARCH. DERMAT., 71: 84, 1955.

1,160 dermatologists and 200 chest surgeons in the United States and Canada replied to a detailed questionnaire concerning cases of North American blastomycosis treated in the first six months of 1953. Of the 101

cases reported, many were observed in the central (i.e. Michigan, Illinois, Indiana and Ohio) and southeastern (i.e. Kentucky, Virginia, North Carolina and Tennessee) areas; 13 cases were reported in Wisconsin, 2 in Canada. In New York State, with the greatest population and the most physicians reporting (229), only 1 case was reported.

Of the 101 reported cases, 89 were in men and 12 in women. The median age for men was 50-59, for women 40-49. Eighteen were diagnosed by biopsy alone, 39 by both biopsy and culture; 21 had single skin lesions, 48 multiple ones; 21 had lung involvement without any skin lesions; 52 had generalized disease; 3 of the 101 died.

Stilbamidine and its derivatives were used alone or with other drugs in 39 cases. Numerous recurrences were reported following this therapy.

The authors express the opinion that the disease "is a rather common and widespread disease in the United States."

ROBERT JACKSON

Cutaneous Moniliasis.

WALLACE, H. J.: PRACTITIONER, 174: 343, 1955.

The yeast-like fungus, *Monilia albicans*, is not found on normal skin, and the author emphasizes the importance of underlying causes in the development of cutaneous moniliasis. These causes include maceration and destruction of keratin by water, alkalis and detergents, and also by sweating and obesity. Diabetes mellitus and the use of the newer broad spectrum antibiotics may also be underlying factors. The localization of monilial infections in the axillæ, groin, finger clefts, vulva, beneath the breasts, and about the nails is explained by the underlying factors. Angular stomatitis or perlèche is almost always due to the accumulation of saliva in patients with ill-fitting dentures. The monilial infection is secondary.

The lesions in the intertriginous areas are macerated with a bright red, moist, sharply defined area of inflammation with an outer border of whitish detached epidermis. There are usually numerous satellite lesions which are small, flat vesico-pustules with an inflammatory halo. In monilial paronychia the clinical picture is similar to that of a low-grade pyogenic infection.

The presence of mycelia and spores on microscopical examination of epidermal fragments, to which has been added 10% potassium hydroxide, makes the diagnosis definite. Treatment is by local application of 0.5 to 1% aqueous gentian violet and removal of the underlying causes.

ROBERT JACKSON

THERAPEUTICS

Diabetic Neuropathy: Controlled Therapeutic Trials.

SHUMAN, C. R. AND GILPIN, S. F.: AM. J. M. SC., 227: 612, 1954.

Treatment of early diabetic neuropathy has usually been satisfactory; this consists of careful insulin stabilization and giving a high protein diet with adequate calories to prevent weight reduction. With few exceptions, early neuropathy is benefited by careful diabetic control; in moderate or severe cases the condition does not respond to this programme, so that vitamin B₁₂, pregnant mammalian liver extract or adenosine triphosphate with thiamine has been suggested.

The authors consider that the objective signs of vibratory sense diminution, hyperæsthesia or reduction of pain and light touch sensation, reduced tendon reflexes and muscle atrophy offer more satisfactory methods for critical analysis than subjective manifestations such as neuritic pain and paræsthesiæ. In the authors' therapeutic trials 37 patients with diabetic

neuropathy were given a period of adequate diabetic treatment; approximately two-thirds of the patients failed to respond and were the subjects of therapeutic trials with vitamin B₁₂, pregnant mammalian liver or adenosine triphosphate with thiamine and pantothenic acid.

In using vitamin B₁₂ the authors started with doses of ten micrograms daily by mouth and intramuscularly; 12 patients were treated in this way, some of them having 1,000 micrograms daily because of failure to improve. The authors also used six series of unlabelled 50 c.c. vials; some containing pregnant mammalian liver extract and others a control substance; the patients selected for this material had not responded to a period of adequate metabolic control, and several had previously received vitamin B₁₂ without benefit. A series of 15 patients were treated with 5 c.c. of the solution intramuscularly daily for periods from ten days to two weeks and then 5 c.c. twice weekly for four to six weeks. Finally six patients were given adenosine triphosphate 25 mgm. together with 20 mgm. thiamine intramuscularly for periods of two to four weeks, and a further four patients were treated with adenosine triphosphate 25 mgm. and pantothenic acid 10 mgm. intramuscularly twice daily for a period of three weeks.

Out of the 37 patients 12 were relieved by careful diabetic control. During the course of administration of vitamin B₁₂ to 12 patients no significant subjective or objective manifestation of improvement was observed; of the patients treated with pregnant mammalian liver none manifested objective improvement, and the results obtained with adenosine triphosphate were also not impressive.

W. F. T. TATLOW

Pulmonary Tuberculosis After the Prolonged Use of Chemotherapy.

AUERBACH, O.: AM. REV. TUBERC., 71: 165, 1955.

It is the author's impression that, since the advent of chemotherapy for the treatment of pulmonary tuberculosis, the anatomical findings are greatly changed. He thinks that the findings are so different, particularly in cases of long-term chemotherapy, and in those in which treatment was begun soon after the onset of the disease, that such cases can be differentiated pathologically from those in which the disease had been successfully treated without the benefit of drugs. This opinion is not shared, however, by the majority of writers on this subject. It has been generally held that the drugs increase the rapidity of healing, but that the pathological lesions are no different from those in untreated cases.

The observations presented in this study are based on extensive examination of autopsy material and surgical specimens in chronic pulmonary tuberculosis. The material includes both treated and untreated lesions and is represented by approximately 2,400 autopsy cases and 500 surgical specimens. The author found definite permanent changes after antimicrobial therapy. The degree of difference from material from untreated cases depends upon the time interval between the onset of tuberculous infection and initiation of chemotherapy, and also upon the duration of therapy. The differences observed after antimicrobial therapy, believed to be secondary to rapid clearing of the perifocal reaction by specific drugs, include the following: (a) the capsules around the necrotic foci are thinner; (b) walls of cavities are thinner; (c) pleura overlying these cavities is thinner; (d) there is a decrease in the degree of pulmonary fibrosis and emphysema; (e) there is a decrease in the number of aneurysms in cavities and in the incidence of pulmonary haemorrhages; (f) cavity closure frequently occurs with a patent and re-epithelized draining bronchus; (g) "open" cavity healing occurs with greater frequency, especially after prolonged chemotherapy.

S. J. SHANE

Studies of Streptococcal Prophylaxis: Comparison of Oral Penicillin and Benzathine Penicillin.

CHANCEY, R. L. et al.: AM. J. M. SC., 229: 165, 1955.

Daily oral administration of sulphonamides or penicillin is an effective method for the prevention of streptococcal infections, and has been reported as a satisfactory preventive measure against recurrences of rheumatic activity. With the introduction of benzathine penicillin, a compound slowly absorbed when administered intramuscularly, it became desirable to test a method of penicillin prophylaxis not dependent on daily co-operation by the patient.

This study was conducted in April 1954 at two military bases. At each base, three different prophylactic regimens were evaluated. One group received 250,000 units of crystalline penicillin G potassium buffered with calcium carbonate orally twice daily, 30 to 60 minutes before meals. The other two groups received benzathine penicillin in doses of 600,000 or 1,200,000 units as a single intramuscular injection. Cultures from the tonsils and oropharynx of each subject were observed before prophylaxis and again 21-27 days later.

All three prophylactic regimens (oral penicillin, 600,000 units benzathine penicillin and 1,200,000 units benzathine penicillin) were effective in eliminating the carrier state for group A streptococci, although the 1,200,000 unit dose of benzathine penicillin was found to be more effective than oral penicillin or 600,000 units of benzathine penicillin.

It would appear, therefore, that a single intramuscular injection of 1,200,000 units benzathine penicillin, given approximately once a month, is a satisfactory prophylactic agent against invasion of the throat by group A streptococci and against recurrences of rheumatic activity.

S. J. SHANE

Combined Rauwolfia-Hydralazine Therapy of Hypertensive Patients.

NAEGELE, C. F. et al.: CIRCULATION, 11: 182, 1955.

Controlled blood pressure responses of 13 hospitalized and 33 ambulatory patients with essential or apparent renal hypertension were studied following combined rauwolfia-hydralazine therapy.

Hospital patients were given rauwolfia serpentina, 4 mgm. per day by mouth, usually after four or more weeks of control observation. After one week, hydralazine was added in initial oral dosage of 75 mgm. daily, rapidly increased up to 600 mgm. daily, given in four divided doses. Observations were then continued for three to seven weeks. In the ambulatory patients, there were minor variations in dosage, but no significant differences.

Blood pressure was adequately lowered in most patients with mild or moderate hypertension, and frequently in those with severe hypertension. With the dosage used in this study, an inadequate response occurred only in patients with severe, chronic, fixed hypertension or with hypertension of apparent renal origin.

Prior administration of rauwolfia largely prevented the untoward effects prone to occur on starting therapy with hydralazine, and permitted initial administration of hydralazine in larger dosage than ordinarily tolerated. With combined rauwolfia-hydralazine therapy, blood pressure was adequately lowered in a high percentage of cases, using moderate dosage of hydralazine. This permitted an ease of administration and patient follow-up, often not possible with larger dosage of hydralazine used alone.

S. J. SHANE

FORTHCOMING MEETINGS

CANADA

CANADIAN PUBLIC HEALTH ASSOCIATION AND ALBERTA PUBLIC HEALTH ASSOCIATION, Conjoint Meeting, Edmonton, Alta. (Dr. William Mosley, Honorary Secretary, 150 College Street, Toronto 5, Ont.) September 6-8, 1955.

CANADIAN SOCIETY FOR THE STUDY OF FERTILITY, Royal York Hotel, Toronto, Ont. (Dr. Earl R. Plunkett, Secretary-Treasurer, Canadian Society for the Study of Fertility, 469 Waterloo Street, London, Ont.) October 6-8, 1955.

UNITED STATES

ANNUAL ASSEMBLY IN OTOLARYNGOLOGY, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois. (Dr. F. L. Lederer, Professor and Head of the Department.) September 19-October 1, 1955.

ANNUAL MEETING OF THE AMERICAN ACADEMY FOR CEREBRAL PALSY, Memphis, Tennessee. (Dr. R. A. Knight, Secretary-Treasurer, 869 Madison Avenue, Memphis 3, Tenn.) October 10-12, 1955.

AMERICAN HEART ASSOCIATION, Annual Meeting and Twenty-Eighth Annual Scientific Session, Jung Hotel, New Orleans, Louisiana. (The Medical Director, American Heart Association, 44 East 23rd Street, New York 10, N.Y.) October 22-26, 1955.

INTERNATIONAL ANÆSTHESIA RESEARCH SOCIETY CONGRESS, Washington, D.C. (Dr. William Friend, 515 Nome Avenue, Akron, Ohio.) October 24-27, 1955.

INTER-SOCIETY CYTOLOGY COUNCIL, 3rd Annual Meeting, Statler Hotel, Cleveland, Ohio. (Dr. P. F. Fletcher, Secretary-Treasurer, 634 N. Grand Blvd., St. Louis 3, Mo.) November 11-12, 1955.

AMERICAN PUBLIC HEALTH ASSOCIATION, INC., 83rd Annual Meeting and Meetings of Related Organizations, Kansas City, Missouri. (The American Public Health Association, Inc., 1790 Broadway, New York 19, N.Y.) November 14-18, 1955.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, Annual Convention, Palmer House, Chicago. (Director of Information, 11 South LaSalle Street, Chicago 3, Illinois.) November 28-30, 1955.

OTHER COUNTRIES

SIXTEENTH CONGRESS OF THE INTERNATIONAL SOCIETY OF SURGERY, Copenhagen, Denmark. (Dr. Hasner, 7 Blegdamsvej, Copenhagen.) July 24-31, 1955.

SIXTH INTERNATIONAL ANATOMICAL CONGRESS, Paris France. (Prof. Gaston Cordier, Secretary-General, 45 rue des Saints-Pères, Paris 6e, France.) July 25-30, 1955.

FOURTEENTH BRITISH CONGRESS OF OBSTETRICS AND GYNÆCOLOGY, Oxford, England. (The Secretary, 14th British Congress of Obst. and Gyn., Maternity Dept., Radcliffe Infirmary, Oxford.) July 27-30, 1955.

THIRD INTERNATIONAL CONGRESS OF BIOCHEMISTRY, Brussels, Belgium. (Prof. C. Liébecq, Secretary-General, 17 Place Delcour, Liège, Belgium.) August 1-6, 1955.

INTERNATIONAL CONGRESS OF PLASTIC SURGERY, Stockholm and Uppsala, Sweden. (Dr. Tord Skoog, General Secretary, Uppsala University, Sweden.) Stockholm, August 1-4, and Uppsala, August 5, 1955.

UNITED NATIONS CONFERENCE ON THE PEACEFUL USES OF ATOMIC ENERGY, Geneva, Switzerland. (Prof. Walter G. Whitman, United Nations, Palais des Nations, Geneva.) August 8-20, 1955.

CENTRAL COUNCIL FOR HEALTH EDUCATION—Summer School, Neuadd Reichel, Wales. (Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.) August 16-26, 1955.

AUSTRALASIAN MEDICAL CONGRESS (B.M.A.)—9th Session, Sydney, Australia. (Dr. J. G. Hunter, B.M.A. House, Macquarie Street, Sydney.) August 20-27, 1955.

ANNUAL MEETING OF THE WORLD FEDERATION FOR MENTAL HEALTH, Istanbul. (Miss E. M. Thornton, W.F.M.H., 19 Manchester Street, London, W.1.) August 21, 1955.

CONGRÈS DE LA LITHIASE URINAIRE, Evian (Hte-Savoie), France. (Séc. Prof. Agr. Cl. Laroche, 16, rue Christophe-Colomb, Paris 8e, France.) September 2-4, 1955.

SECOND INTERNATIONAL CONGRESS OF ANGIOLOGY AND HISTOPATHOLOGY, Fribourg, Switzerland. (Dr. Gerson, 4 rue Pasquier, Paris 8e.) September 2-5, 1955.

WORLD CONGRESS OF ANÆSTHESIOLOGISTS, Scheveningen, Netherlands. (W. A. Fentener van Vlissingen, Noord-Houdringelaan, 24, Bilthoven.) September 5-10, 1955.

THIRD INTERNATIONAL CONGRESS OF VITAMIN "E", Milan, Italy. (Secretary of the Congress, Prof. Emilio Raverdino, Milano, via Pietro Verri 4, Italy.) Early September 1955.

INTERNATIONAL CONGRESS OF CRIMINOLOGY, London, England. (Dr. Carroll, 28 Weymouth Street, London, W.1.) September 11-18, 1955.

INTERNATIONAL CONGRESS OF NEUROPATHOLOGY, London, England. (Dr. W. H. McMenemy, Maida Vale Hospital, London, W.9.) September 12-17, 1955.

GENERAL ASSEMBLY, INTERNATIONAL PHARMACEUTICAL FEDERATION, London, England. (Pharmaceutical Society of Great Britain, c/o Mr. D. F. Lewis, 17 Bloomsbury Square, London, W.C.1.) September 19-23, 1955.

GENERAL ASSEMBLY OF THE WORLD MEDICAL ASSOCIATION, Vienna. (Dr. L. H. Bauer, Secretary-General, 345 E. 46th Street, New York 17, N.Y.) September 20-26, 1955.

UNITED NATIONS CONGRESS ON THE PREVENTION OF CRIME AND THE TREATMENT OF OFFENDERS, Geneva, Switzerland. (U.N. Information Centre, Russell Square House, Russell Square, London, W.C.1.) September 22-23, 1955.

CONGRESS OF FRENCH-SPEAKING SOCIETIES OF GYNÆCOLOGY AND OBSTETRICS, Brussels. (Dr. Vokaer, 309 avenue Molière, Brussels.) September 22-24, 1955.

FIRST INTERNATIONAL CONGRESS OF MEDICAL ETHICS (Premier Congrès International de Juridiction Professionnelle Médicale et de Droit Médical Comparé), Paris. (Congress Secretary: Conseil National de l'Ordre des Médecins, 60 Boulevard Latour-Maubourg, Paris 7e.) September 30, October 1-3, 1955.

PAN-AMERICAN CONGRESS, International Congress of Surgeons (in conjunction with Argentine conference on thoracic surgery), Mendoza, Argentina. (Biblioteca, Asociacion Medica Argentina, Santa Fé 1171, Buenos Aires, Argentina.) October 22-26, 1955.

CONGRESS OF THE INTERNATIONAL UNION OF THE MEDICAL PRESS, Paris, France. (Jean Mignón, Secretary-General, "Le Concours Médical," 37 rue de Bellefond, Paris 9e.) October 16-20, 1955.

INTERNATIONAL CONGRESS OF ALLERGOLOGY, Rio de Janeiro. (Dr. F. W. Wittich, 424 LaSalle Medical Bldg., Minneapolis, Minn.) November 6-12, 1955.

SECOND WORLD CONGRESS OF THE INTERNATIONAL FERTILITY ASSOCIATION, Naples, Italy. (Prof. G. Tesaro, President of Committee Arrangements, S. Andrea delle Dame, 19, Naples.) May, 1956.

INTERNATIONAL CONGRESS AGAINST ALCOHOLISM, Istanbul, Turkey. (International Bureau Against Alcoholism, Case Gare 49, Lausanne, Switzerland.) September 10-15, 1956.

NEWS ITEMS

BRITISH COLUMBIA

We are happy to report that Dr. M. M. Weaver, Dean of the Medical Faculty of the University of B.C., has recovered from his recent illness, and has returned to his duties.

There is a great deal of agitation in hospital circles in this province at the present time over a recent order by the government that hospital budgets are to be held at the 1954 level. Costs of hospital administration are rising continually, and the government feels that a halt must be called.

Unfortunately, practically every hospital of any size, in bringing forward its budget for the year 1955, has been faced with an inevitable increase, owing to agreements entered into with labour unions, nurses' organizations and so on. These agreements were made at the beginning of the year. Now, some five or six months later, they have received this stop order from the government, apparently without any previous warning. The hospitals take the position, and very rightly, that they cannot now go back on agreements already made, and that, if this order stands, they will have to cut services in one way or another. Negotiations are believed to be proceeding between the two parties.

Dr. Fred Bonnell of Victoria was named president-elect of the Pacific Northwest Radiological Society at its annual convention, held this year in Spokane, Wash.

Dr. H. M. Edmison of Victoria was named first vice-president of the Society at the same meeting.

The Council of the College of Physicians and Surgeons of B.C. recently elected four members of the College to Honorary Life Membership in the College. They are: Dr. Gordon Burke, Vancouver; Dr. A. L. Crease, White Rock; Dr. George E. Darby, Bella Bella; Dr. Stanley Paulin, Vancouver.

The minute recording this states that each of these gentlemen has practised his profession in this province for over forty years, and has rendered distinguished service.

The National Research Council of Canada has awarded medical research fellowships to 27 medical men throughout Canada, of whom two are from Vancouver: Dr. W. G. Bruce Casselman, who will do research work at the University of Toronto, and Dr. Philip C. Fitz-James, who will do research at the University of Western Ontario, London.

J. H. MACDERMOT

ALBERTA

The Alberta Psychiatric Association held its annual meeting at the Provincial Mental Hospital in Ponoka, Alberta, and elected a new slate of officers, headed by Dr. G. D. Carson of Edmonton as president. Honorary memberships were bestowed on Drs. D. L. McCullough, M. G. McCullough and W. J. McAllister, all of whom have served for many years in the Red Deer and Oliver institutions and have been retired for some time. Dr. J. M. McEachern, formerly Professor of Philosophy and Psychology at the University of Alberta, and for many years chairman of the Eugenics Committee, was similarly honoured.

The Edmonton Society of Specialists in Internal Medicine heard two visiting speakers during the early part of the year. Dr. Martin Hoffman, Director of Medicine, Jewish General Hospital, Montreal, spoke on "Rare endocrine disorders which are usually misdiagnosed," and Dr. L. Horlick, Assistant Professor of Medicine, University of Saskatchewan, delivered a paper on "Serum lipoproteins in health and disease."

The Alberta Chapter of the College of General Practice of Canada met in Red Deer, Alberta, on April 14 and 15. A comprehensive programme was presented. Dr. M. R. Stalker, Ormstown, Quebec, President of the College, delivered a paper on "The history and background of the world-wide general practice movement." The meetings were very well attended and the papers given were of a high calibre.

The College of Physicians and Surgeons of the Province of Alberta has released the names of winners of the scholarship awards for 1954-1955. These are: First-year Proficiency (1st), William Alastair McLeod, Edmonton; First-year Proficiency (2nd), Ormond James Uptigrove, Calgary; Second-year Proficiency (1st), Kenneth Burton Wiancko, Rimbey; Second-year Proficiency (2nd), Richard Stanton Tenove, Edmonton; Third-year Proficiency (1st), Norma Eleanor Harris, Edmonton; Third-year Proficiency (2nd), Ronald Harvey Wensel, Edmonton.

Each scholarship has a value of \$200 and is payable contingent upon the winner's returning to the University of Alberta in the autumn of 1955.

The Annual Meeting of the Canadian Medical Association, Alberta Division, is planned for October 10-13, 1955, at the Macdonald Hotel, Edmonton. This will be the Fiftieth Anniversary Meeting and special preparations are being made to celebrate the Golden Jubilee Year of organized medicine in Alberta. The Committee on Archives and Scientific Exhibits is presenting special displays and is anxious to hear from those persons who wish to participate. *The Alberta Medical Bulletin* will "come of age" with the commencement of Volume 21, and articles of an historical nature will be given prominence in the August 1955 issue.

M. M. CANTOR

MANITOBA

The Department of Health and Welfare medical directors conference arranged by the Children's Hospital of Winnipeg and the Department of Paediatrics was held in the Children's Hospital on June 2 as an item in their postgraduate activities.

Professor Bruce Chown spoke on erythroblastosis foetalis and Professor Colin Ferguson, Dr. N. P. Merkeley and Dr. C. W. Clark discussed surgical problems in the newborn. Dr. H. Bottomley dealt with allergy in childhood and Dr. H. Hurst with dermatological problems. After a brief intermission and ward rounds there was a round table discussion with Professor H. Medovy as chairman and Drs. J. R. Mitchell, J. N. Briggs, A. J. DePape and Georgina Hogg as members.

The old Selkirk General Hospital building has been bought by W. S. Dunlop, a Winnipeg druggist, and after renovation will be operated as a privately owned nursing home. Staffed by a matron and registered and practical nurses, it will accommodate 100 patients.

The Canadian Tuberculosis Association met in the Royal Alexandra Hotel, Winnipeg, June 7-11. At the annual dinner on June 9 Dr. E. L. Ross was installed as president. Life memberships were conferred on Mr. E. G. Hingley of Regina, Mr. R. D. Roberts of Saskatoon, Dr. F. W. Jackson, Department of National Health and Welfare, Ottawa, and Mr. G. W. Northwood and Dr.

Ross Mitchell of Winnipeg. The reception and dinner were tendered to the Association by the Province of Manitoba. At a luncheon in Assiniboine Park on June 10, given by the City of Winnipeg, Dr. G. J. Wherett, executive secretary of the Association, presented a bronze plaque to commemorate 43 years of service of King Edward Hospital in the fight against tuberculosis. Opened in 1912, it is the first publicly owned tax-supported tuberculosis hospital that has been able to close because there is adequate space in other tuberculosis hospitals in the province. The hospital is being made over, probably to provide accommodation for aged and infirm pensioners of the city. Dr. and Mrs. E. L. Ross left on the evening of June 11 to attend an international tuberculosis conference in London. Later, they will visit Italy.

The sod was turned recently for the new hospital to be built at Portage la Prairie.

ROSS MITCHELL

QUEBEC

Professor E. G. D. Murray, O.B.E., a colourful personality at McGill University, professor of bacteriology and immunology, a recognized researcher, teacher and administrator, and a member of the City of Montreal Council since 1947, retired under the university age limit ruling at the end of the session. Dr. Murray came to McGill in 1930 from Cambridge University, England. He soon won widespread recognition and developed one of the finest university bacteriology departments in Canada.

It is a pleasure indeed to record that the University of Montreal, at its 1955 Convocation, included Professor Murray among the six Canadians honoured by the University with the degree of Doctor of Science. Furthermore, the Montreal Medico-Chirurgical Society elected Professor Murray to Fellowship by unanimous vote in 1955, a signal honour indeed.

Professor E. G. D. Murray will be succeeded by Dr. Roger W. Reed, professor of bacteriology at Dalhousie University, Halifax. Dr. Reed is a Nova Scotian, a veteran of the Second World War, and formerly bacteriologist at the Montreal General Hospital.

The Montreal Medico-Chirurgical Society wound up its 1954-55 calendar year with an Annual Society Meeting on May 20 at the McGill Faculty Club. Reports were presented by representatives of Sections, the Honorary Secretary, the Honorary Treasurer and the Public Relations chairman. The Annual Interns' Essay Contest prizes were presented to Dr. R. W. Fanjoy, Royal Victoria Hospital, first prize, and to Dr. Clyde M. Williams, Royal Victoria Hospital, second prize. Officers elected for the coming year included Dr. W. J. McNally, president, Dr. McIver Smith, honorary secretary, and Dr. A. H. Neufeld, honorary treasurer. Dr. J. W. McKay will be the past-president. The presidential address, given by Dr. J. W. McKay, on "A Challenge to Medicine" was a thorough and thoughtful discussion of the economic challenge—a situation we may have to face, whether we like it or not.

On May 1, the Central and Western Divisions of the Montreal General Hospital began to cut down their patient population by accepting only emergency or short-term patients. The move of staff to the new buildings on Cedar Avenue began shortly afterwards. On Saturday, May 14, 180 nursing sisters moved from the old Dorchester Street residence to the new Livingston Hall, and 85 members of the resident medical staff moved to their new quarters. On Sunday, May 22, the Western Division transferred about 50 private patients to the new buildings. In the meantime, at convenient intervals, the furnishings and equipment were transferred from the old

to the new buildings. On May 29, the new hospital on Cedar Avenue came into full operation. Quietly, efficiently and with no particular incident, 103 public and semi-private patients from the old buildings on Dorchester Street East were transported to the brand-new, twenty million dollar hospital set on the slope of Mount Royal. This has completed the transfer, both from the Central and the Western Division of the Montreal General.

The new hospital has a staff of 1,312, plus 100 resident and 175 attending physicians. It has a total of 761 beds and 51 bassinets. We believe that the new Montreal General has facilities for the treatment of the sick and injured unsurpassed anywhere in Canada.

A. H. NEUFELD

NEW BRUNSWICK

Dr. Lee F. Stickles, graduating in medicine this spring from Dalhousie University, has been presented with the Col. Murray MacLaren Memorial Award by the Saint John General Hospital, where he interned during 1954-1955. During his tour of duty at the hospital he was judged to have given the best service to the hospital and its patients and to have shown a satisfactory increase in practical knowledge.

At the Annual Convention of the N.B. Society of X-Ray Technicians held at Moncton on May 28, Dr. H. R. Ripley and Dr. C. Ibbotson were the special speakers in radiological subjects and Dr. O. J. White presented a paper on orthopaedic radiography.

The Chairman, Dr. Fred Cheesman, and the Executive Committee of the Saint John Medical Society have suggested that at the Annual Maytime Dinner of the Society some mature member of the Society discuss progress in some specialty or the historical aspects of some branch of medicine, with emphasis on colour, glamour or humour rather than a review of statistics. As a trial horse or guinea pig they chose the writer, Dr. A. S. Kirkland, who is certainly mature! The commentary presented was received with the well-known politeness of Maritime audiences, and the speaker was rewarded with a splendid souvenir of his audacity as lead-off man in a rather fast league.

The Hon. J. F. McInerney, M.D., Minister of Health of N.B., has announced the appointment of a new committee, the Visitors Committee for the Provincial Hospital for Mental Diseases, to provide a direct channel of communication and information between the hospital and the public and to make observations on the needs of the patients. Two physicians are members of this new group, Dr. R. M. Pendrigh of West Saint John and Dr. L. J. Stephen of Simonds.

At the third annual graduation exercises at St. Louis College, Edmundston, N.B., Dr. A. M. Sormany received an honorary degree of Doctor of Philosophy.

Dr. Alton Goldbloom, Professor of Pædiatrics at McGill University, addressed sectional meetings of the N.B. Medical Society at Grand Falls and Fredericton on May 31 and June 1.

At the North Shore Clinical Meeting held on June 1 the following programme was presented:

- (a) "Head injuries"—Dr. Harold Rosen; discussion—Dr. D. A. Thompson.
- (b) "Pain in chest"—Dr. Hector H. MacKinnon; discussion—Dr. James F. Keays.
- (c) "Intervertebral discs"—Dr. Harold Rosen; discussion—Dr. C. H. Johnson.
- (d) "The hyperventilation syndrome"—Dr. H. H. MacKinnon; discussion—Dr. C. Desjardin.

A. S. KIRKLAND

*14 different symptoms in 14 different patients
pointed to a single diagnosis—depression*

Watts¹ saw varied, ill defined, and apparently
unrelated symptoms—such as the
ones below—in 14 of his patients:

insomnia—
fainting—
pain in chest—
indigestion—
fatigue—
dizzy spells—
cough—
asocial behavior—
fear of being alone—
weeping bouts—
loss of interest in job—
irritability—
chronic invalidism—
heavy drinking.

For each of these patients
he made the same
diagnosis: depression.

Watts found—as countless
other physicians have
discovered—that when
he specifically treated
these patients for depression,
their miscellaneous
psychosomatic complaints vanished.

'Dexedrine Spansule'
capsules assist in
restoring such patients
to normalcy by providing
day-long relief from depression,
renewing interest and optimism
and restoring the capacity
for physical and mental effort.

S.K.F.'s 'Spansule' capsules are the only
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BOOK REVIEWS

NEURO-OPHTHALMOLOGY

D. J. Lyle, Professor and Director of the Department of Ophthalmology, College of Medicine, University of Cincinnati. 591 pp. illust. 2nd ed. \$19.25. Charles C Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1954.

This textbook is best described as a practical reference work for the ophthalmologist and neurologist alike, subserving a brief perusal of the literature concerning both fields. Textbooks dealing with such interrelated and specialized fields are gaining in popularity and usefulness. In that neither of these two necessarily integrated fields can be studied to the exclusion of the other, they lend themselves particularly well to incorporation in a composite textbook of this nature.

Attractively prepared and more comprehensive than the first, the second edition of this work endeavours without burdening the reader with too much scientific detail to correlate these two highly complex and interrelated fields on a clinical and practical basis. This the author has managed to do in a very interesting and readable style.

A book of this size attempting to encompass the scope of neuro-ophthalmology is necessarily all too brief (there being almost no fine type) for the wants of most clinicians. Consequently much of the subject matter is treated in a cursory manner and there are some deficiencies. The copious bibliography, however (conveniently displayed at the end of each chapter) is representative of current and past literature.

Organized in a logical way, the book treats each subject as a basic study, followed by a brief outline of related clinical problems and discussion. The author begins with the eye, an outgrowth of the brain, its pathways and central connections. This is followed by a study of each of the cranial nerves associated with the orbit, other nerve pathways and related manifold lesions. Subsequent chapters deal with the vascular system, the cerebrospinal fluid, inflammatory lesions, head injuries, tumours, and finally syndromes, all pertaining to the eye and its central connections. Throughout the text, brief reference is regularly made to pertinent clinical case histories which contribute considerably to background information.

Great credit is due the author for the many original, graphic and high-quality illustrations. In the second edition there are 43 new figures. The excellent anatomical dissections are particularly well photographed. The many fundus stereophotographs are unfortunately uncoloured. The stereoscopic effect suffers from the unnatural coarseness of the black and white grain and hence contributes little.

Although the high price makes the book less well suited to private ownership than to the medical library, the subject is treated in such a lively, concise style, well suited to average readers, that the book makes a good quick reference text for the busy clinician. This was probably one of the prime requisites the author had in mind during the conception and writing of this text.

ANTIBIOTICS ANNUAL 1954-1955

Proceedings of the Second Annual Symposium on Antibiotics.

Edited by H. Welch, Chairman, Second Annual Symposium on Antibiotics; Director, Division of Antibiotics, Food and Drug Administration, and F. Marti-Ibanez. 1,154 pp. illust. \$10.00. Medical Encyclopedia, Inc., New York, N.Y., 1955.

If anyone needs assurance that the field of antibiotics is not a static one, this book should provide the needed evidence. It contains 172 original scientific papers or addresses presented at the Second Annual Symposium on Antibiotics held in Washington in October 1954.

The titles give a kaleidoscopic view of research activity in a complex and active field. They run from "Therapeutic Range of Chloramphenicol in Purulent Meningitis" to "Carbomycin as an Animal Growth Stimulant" and "Use of Antibiotics against Agricultural Plant Pathogens." One deals with "Lamarckian Inheritance of Streptomycin Resistance." One is labelled optimistically "New Clinical Pediatric Facts on Tetracycline." Among the more philosophical ones is "A Proposed Crusade for the Rational Use of Antibiotics."

Antibiotics have been studied singly and combined, and in conjunction with hormones, enzymes and metallic ions. There are such intimate combinations as streptomycin-isonicotinyl hydrazine sulfate. Their effects on thrombin inhibitor and on heat regulatory centres of the human brain have been investigated. There are antibiotics active *in vitro* or *in vivo* against bacteria, viruses, fungi, protozoa, sarcoma cells, and on mouse mammary adenocarcinoma. One will even influence the ability of a hen to lay eggs.

Among the newer antibiotics are griseoviridin, viridogrisein (which later was found to be the same as etamycin), celesticetin, spiramycin, and anisomycin whose trade name will be Flagecidin. One is called simply P.A. 105.

Much of the work reported is new; some is old. Much of it will soon be forgotten; some will be pursued further. Much now has academic interest only; some could be applied profitably to medical practice.

This book is primarily for the specialist in antibiotics, but it will also be stimulating for others who have inquiring minds. It is not for those whose interests do not go beyond dosage schedules for antibiotics.



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MEDICINE IN MANITOBA — THE STORY OF ITS BEGINNINGS

R. Mitchell. 141 pp. illust. \$2.00. Privately printed by the Manitoba Division of the Canadian Medical Association.

Ross Mitchell concludes his foreword with Francis Bacon's familiar words, "I hold every man a debtor to his profession," and indicates that his history of medicine in Manitoba was undertaken as one man's contribution toward the discharge of that debt. How admirably this little volume serves its purpose; how painstakingly the author has assembled the facts about the great names and the great events in his native province: the Red River Colony, Rupert's Land, and the Icelandic Settlements, the Northwest Rebellions, these constitute the backdrop against which the early doctors of Manitoba acted out their parts in the drama of the West. Many of them had interests much wider than the dispensing of pills and they distinguished themselves in politics, in education, in public health and many other fields.

How fortunate it is that the Manitoba Division had the foresight to commission such a work of history, and how fortunate that the historian was able and willing. When one reads this invaluable record one is reminded of Doctor Heber Jamieson's "Early Medicine in Alberta" and Maude Abbott's "History of Medicine in Quebec." The example to other divisions to record the early days of their medical development is so obvious that it requires no endorsement. It does, however, require the interest, industry and devotion of a man like Ross Mitchell and they are not too common in our ranks.

The attractively printed volume "Medicine in Manitoba" is heartily recommended to all those interested in medical history, remote and recent. It is a record which deserves the attention of every practitioner of the province as well as every graduate of its medical school, and it is to be hoped that it will find its way to the bookshelves of Canadian doctors everywhere. Copies at \$2.00 may be ordered from the Executive Secretary, Manitoba Division, Canadian Medical Association, 604 Medical Arts Building, Winnipeg.

VIRAL AND RICKETTSIAL DISEASES OF THE SKIN, EYE AND MUCOUS MEMBRANES OF MAN

H. Blank, *Squibb Institute for Medical Research, Columbia University*; and G. Rake, *University of Pennsylvania, Wistar Institute of Anatomy and Biology*. 285 pp. illust. \$8.50. Little, Brown & Company, Boston and Toronto, 1955.

The past ten years have witnessed the addition of an increasing number of first-class publications on special aspects of the field of dermatology. To this list Blank and Rake have added an excellent book on viral and rickettsial diseases of the skin, a book that adds lustre and prestige to dermatology, now being recognized as a field as broad as the realm of medicine, encompassing human disorder in depth and diffuseness and reaching into every nook and cranny of the body.

Blank and Rake join in happy union the clinical and the scientific in a quietly dramatic atmosphere of intellectual honesty. This union stands firmly on the bedrock of modified "Koch's postulates," and excludes disorders such as pemphigus, dermatitis herpetiformis and lupus erythematosus which cannot quite crash the postulate gates. Best of all, there is no shilly-shallying about therapeutic agents. Chemotherapy must pass the test of "properly controlled studies in man" and as a result the authors state dogmatically that "no clinically true antiviral chemotherapeutic agents are available."

This reviewer can recommend no more pleasant exercise for one interested in the drama of scientific medical

progress than to read the chapter on herpes simplex after first reading the section on this subject in any standard textbook written fifteen to twenty years ago. The experience is little short of breathtaking. Gradually, by patient clinical and laboratory effort the apparently unrelated parts of the puzzle have been put together to produce a unity of scientific medical achievement.

To those physicians who enjoy the luxury of resting with a book in a soft warm bed at the end of a hectic day, this book is highly recommended as good reading. And you don't have to be a weight-lifter to hold it. Any book that requires a derrick to keep it in place while the reader relaxes in bed has two strikes against it before it hits the sales shelves.

SURGERY OF THE HEART

C. P. Bailey, *Professor and Head of the Department of Thoracic Surgery, Hahnemann Medical College and Hospital, Philadelphia, Pa.* 1062 pp. illust. \$25.00. Lea & Febiger, Philadelphia; The Macmillan Company of Canada Limited, Toronto, 1955.

This is an excellent book. Both the congenital and acquired cardiac lesions amenable to surgery are well covered. Each lesion is discussed in a comprehensive manner beginning with embryology, when indicated, and carried along through pathophysiology, investigation, diagnosis and the steps of the operative procedure. The results as obtained in the author's hands, with follow-up records to date, complete the picture.

The history of cardiac surgery is presented and due credit is given to the originator of each advance in this new field. The author draws attention to techniques used in other centres and then presents his own, if it differs, supplementing the written word by the use of many clear diagrams. The pitfalls and complications of each procedure are well documented.

Each centre will naturally develop its own modifications of procedures which in its hands facilitate both investigation and therapy—even the author will change. For example, the reviewer has found that hypothermia, by the Bigelow technique, rather than being contraindicated has been of great help in acquired lesions, either greatly decreasing the risk in poor risk patients or even in some cases transferring very poor risk patients into the successful operative group. In chronic constrictive pericarditis cases the reviewer has had excellent results with the trans-sternal approach and deliberate opening of both pleuræ.

In a new field developing as rapidly as cardiac surgery is, great advances will take and are taking place. In the interim this textbook is essential, not only for cardiac surgeons but also for cardiologists who of necessity in this age must be up to date in knowing what surgery has to offer the cardiac patient.

REVIEW OF MEDICAL MICROBIOLOGY

E. Jawetz, *Professor of Bacteriology and Lecturer in Medicine and Pediatrics, University of California School of Medicine, San Francisco*; Joseph L. Melnick, *Professor of Epidemiology, Yale University School of Medicine, New Haven*, and E. A. Adelberg, *Assistant Professor of Bacteriology, University of California, Berkeley*. 360 pp. illust. \$4.50. Lange Medical Publications, Los Altos, Cal., 1954.

This publication gives not only general science consideration of the cellular organisms found in relation to man, but also—in later sections—a specific idea of the information available in each case of association of man with parasitic micro-organisms. Chemotherapy is described as well as the relation to bacteria and viruses. The recent contribution to knowledge of poliomyelitis will no doubt be treated in the edition to be published in 1956. This is a compilation of the information available at the time of publication.

LABORATORY AIDS IN ENDOCRINE
DIAGNOSIS

R. F. Escamilla, *Associate Clinical Professor of Medicine, University of California Medical School, San Francisco*. 131 pp. illust. \$5.25. Charles C Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1954.

This book presents a most valuable aid to the general practitioner and specialized physician who only occasionally encounters cases of endocrine diseases. It will help him in confirming his clinical diagnosis. It is well stated by the author that laboratory procedures are only aids which should be used to corroborate a clinical diagnosis.

THE TECHNIQUE OF PSYCHO-
ANALYSIS

E. Glover. 404 pp. \$6.00. Baillière, Tindall & Cox, London, England; The Macmillan Company of Canada Limited, Toronto, 1955.

There seems to be more fear of the reactions of the analyst than clear thinking about the relief to be afforded the psychotic in this volume. The text is full of the argot of psychoanalysis, but the reason for the use of it is not clear. No doubt the intimate relation between the patient and the patient analyst must produce some benefit to both. Insight into the ideas of another human being is difficult to arrive at, and the only effort at any special technique might be summed up in a few words. Perhaps, however, to listen, watch, ask questions and record the answers may be the only way to put the working of the individual mind under the microscope. The chapter on termination seemed to offer a little more concrete advice than any other.

The book goes into technical details of the recommended tests and is divided into twelve major chapters, dealing with such subjects as special tests of blood, urine, basal metabolic rate, radioactive iodine uptake, x-ray tests, vaginal smear examinations, endometrial biopsy, semen examination and testicular biopsy. In most of the tests mentioned, reference to original methods is given. The final chapter gives an endocrine disease index which is most useful as a guide to choice of laboratory tests most apt to confirm clinical impressions. The tests are listed as most important tests, occasionally helpful tests, and laboratory findings of incidental interest. Generally speaking, this book will be a most welcome help to anybody dealing with diseases of endocrine glands.

MEDICAL HISTORY OF THE SECOND
WORLD WAR

Civilian Health and Medical Services, Volume II. Edited by Sir Arthur S. MacNalty. 406 pp. 45/-. Her Majesty's Stationery Office, London, England, 1955.

The story in this volume is presented in four parts, its scope being world-wide. Part I deals with public health in the Colonies, British Somaliland, Palestine, Cyprus, Gibraltar and Ceylon, including the epic siege of the Island of Malta and conditions under enemy occupation in Hong Kong, Malaya and North Borneo. Particularly memorable are the narratives by Sir Selwyn Selwyn-Clarke and Dr. R. B. MacGregor on conditions of prison camps—their struggle to prevent disease, to save human life and to treat patients.

Parts II, III and IV are devoted to the civilian health and medical services of the United Kingdom. In Part II, Dr. A. Sandison tells the story of events leading up to the wise and farseeing legislation, guided by medical advice, by which the Ministry of Pensions was able to produce magnificent results in rehabilitation of the injured. Part III details the work of the Department of Health for Scotland. They worked along similar lines and in close co-operation with the Ministry of Health. Part IV deals with public health in Northern Ireland. Although local conditions dictated to some extent differences in planning and organization, the story in these three parts shows that the work and administration of public health under war-time conditions was not only maintained but improved considerably. It was even possible to lay many of the post-war plans which led to the National Health Services. This volume, like its predecessors, emphasizes the many medical lessons learned under circumstances of unprecedented difficulty.

THE TREATMENT OF THE ALCOHOLIC

F. Kant, *Psychiatrist and Neurologist, Madison, Wisconsin; Professor of Neuropsychiatry, University of Wisconsin Medical School*. 130 pp. \$3.75. Charles C Thomas, Springfield, Illinois; The Ryerson Press, Toronto, 1954.

This is a small book of only 114 pages plus a glossary of terms, an up-to-date bibliography, and index. In these few pages the author has set forth a picture of the complex illness of alcoholism and what modern treatment can provide. Dr. Kant has the happy faculty of writing in a readable language which will make the book valuable to the non-medical person working in the field. At the same time the material included is pertinent to the needs of the physician wishing a survey of modern attitudes and knowledge about this problem. The author discusses briefly the nature and extent of the illness, the personality types commonly seen among alcoholics, diagnosis, and various methods of treatment.

The book can be recommended without qualification to all who wish a brief but accurate picture of the disease alcoholism.

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